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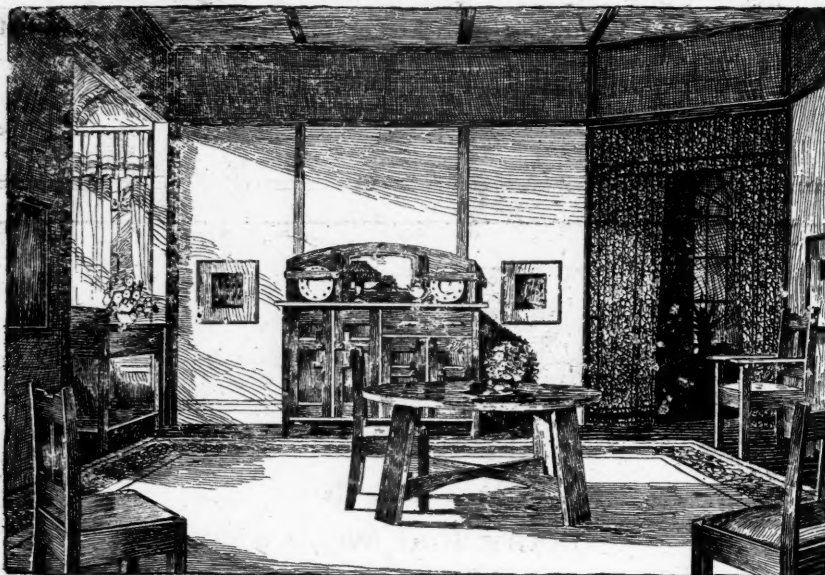
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No. 4.

ON THE TREATMENT OF GONORRHOEA BY THE GENERAL PRACTITIONER.¹

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For some years prior to and particularly since the outbreak of war, the venereal diseases have been occupying the minds of the general public and of the medical profession to a far greater degree than previously. It is now generally realized that the time has arrived for organized efforts to deal with these diseases. This realization has resulted in the introduction of legislation dealing specially with these infections and in the near future all the Australian States will have venereal diseases acts of their own. Until health matters are controlled by the Commonwealth, there will be no real uniformity in all the provisions of these acts; but they will have this point in common, that the treatment of venereal disease will be limited to medical practitioners. On them will fall the onus of reporting cases, of treating them and of giving certificates of cure. In the eyes of the law one medical practitioner will be as competent to treat venereal diseases as another; and one doctor's certificate of cure or of fitness for marriage will be as good as that of the next.

In some of the cities, special venereal diseases clinics have been established under the care of experts, and in others they will be established. In the cities, too, the specialists will congregate, so that patients in or near the cities will have the best facilities for treatment. But in the country towns persons suffering from these diseases will usually choose to be treated by their local doctors rather than to submit to the loss of time and expense of travelling to a city in search of a specialist. It is therefore certain that a considerable proportion of these patients will continue to be treated, both in the cities and in the country towns, by general practitioners; that is, other than specialists, or those in charge of special treatment clinics.

Taking gonorrhœa only, the question arises whether the average general practitioner is sufficiently interested in this disease to treat it thoroughly in all its stages and to certify to a cure at the end. In this connexion there are all grades of practitioners, from the man who dislikes to have anything at all to do with a gonorrhœa case, to the man who has made a special study of the disease, and who has added special urethral instruments to his surgical armamentarium. Between these are the greater number, who are generally too busy to do more than to order their patients a syringe, medicine and lotion, to give them verbal instructions as to what to do with them, perhaps occasionally to pass a sound or to give massage and finally, when the patient seems to be dry, when his urine is almost clear and when two or three slides have proved to be negative, to certify him as cured.

I think that the general practitioner is not yet

sufficiently interested in gonorrhœa and that everyone who decides to undertake its treatment, should take special pains in every case and should continue to give attention to each while improvement is being maintained. When, in spite of treatment, the case is not markedly improving or becomes stationary, he should not persist too long, but should advise the patient to seek further advice at the hands of a specialist. No practitioner, unless he has special knowledge and facilities near at hand for special bacteriological examinations, should take the responsibility of certifying to a cure. In a paper read before this Branch by Dr. Willis² was set out a standard of cure, together with a résumé of standards laid down by various authorities. Unless a practitioner is prepared to carry out some such scheme, he should decline the responsibility of certifying.

However, as the question of a standard of cure does not come within the scope of this paper, let us get back to treatment. A standard of treatment is no easier to agree upon than a standard of cure; it is largely a matter of opinion. But in the following remarks will be found the least that I consider should be done by the general practitioner. None of it is new, but I wish to insist that all of it is necessary. It can all be found in the text-books of which three of the most concise are: "The Practitioners' Manual of Venereal Diseases," by A. C. Magian, "Common Diseases of the Male Urethra," by Frank Kidd, and "Venereal Diseases in General Practice," by Colonel Harrison.

A.—The Acute Stage of Gonorrhœa.

The acute stage of gonorrhœa is that which interests the general practitioner most, because the greatest number he will be called upon to treat will present themselves in this stage.

(1) *Diagnosis*.—After questioning the patients as to the duration of the attack, the incubation stage, previous attacks, etc., he should examine the discharge microscopically. In the great majority of cases a creamy yellow discharge from the meatus appearing three to four days after intercourse justifies the diagnosis of gonorrhœa, and the microscope settles the diagnosis. But the microscope must not be omitted in any case, or mistakes may occur.

(2) *Treatment*.—After a diagnosis of gonorrhœa has been made, the practitioner should proceed to give the patient full instructions as regard general treatment and irrigation as follows:—

Rest.—Until the acute stage has quite subsided, i.e., for two to three weeks, at least, he should give up all recreatory exercise and rest as much as possible. Horse riding, bicycling and driving must be forbidden.

Diet.—The rule is to avoid all rich and seasoned dishes, including condiments and sauces. Plain food and a plentiful supply of diluting fluids should be prescribed, except alcohol, and the majority of the aerated soft drinks. A little lemon or lime juice may be taken.

¹ Read at a Meeting of the Queensland Branch of the British Medical Association on June 14, 1920.

² The Medical Journal of Australia, April 10, 1920, page 336.

Personal cleanliness.—I cannot too strongly insist on this point. The patient who is careful about the cleanliness of his genital organs, lessens to a considerable degree the risk of secondary infections. He must wash his hands, glans and prepuce carefully with soap and water before every irrigation. A gonorrhœa bag and a bathing-V should be ordered, the former being better than packing wool inside the foreskin and the latter being the best and cheapest testicle suspender.

Risk of infection.—The practitioner should instruct the patient to avoid all things sexual until he is declared cured, not only for his own sake, but for others; he should also tell him of the risk of ophthalmia.

Medicine.—An alkaline mixture with hyoscyamus is the best when scalding or chordee is present; later sandal wood oil in some form should be given. But the patient should realize that medicine will not do much towards curing him; his salvation lies in other treatment.

Irrigation.—The hyper-acute case, with profuse discharge, œdema of prepuce and meatus and severe scalding is best treated by rest and hot bathing, without irrigation, until the acuter symptoms have subsided. In the ordinary acute case the patient should commence irrigation straight away. It is the practitioner's duty to teach the patient in the surgery, until he is familiar with the technique. After this has been done, he may, if convenient, continue irrigating at the surgery, so as to be under supervision; or, if inconvenient, at his own home with a douche-can or collapsible rubber douche-bag. It is only when patients decline to irrigate at home, or when the practitioner cannot arrange surgery irrigation, that injection with a hand syringe should be ordered. But if it is ordered, then it is the doctor's duty personally to instruct the patient in the use of it at the surgery, until he has mastered the steps.

The steps are:—

- (a) Have the instruments and lotion sterile and warm.
- (b) Have the hands, *glans penis* and meatus well washed.
- (c) Make the patient urinate.
- (d) Irrigate (or inject) the anterior urethra, but do not over-distend it. Over-distension only causes pain and may force the lotion back into the posterior urethra.

In this connexion I do not agree with the authorities who believe in posterior irrigation as a routine. Therefore the douche-can should not be a centimetre more than 60 cm. above the level of the penis; for the injection only enough is used to fill the urethra comfortably. Later, as the soreness subsides, the urethra will accommodate more and at a greater pressure.

For irrigation the most useful drug is potassium permanganate in strength of 1 in 8,000 to 1 in 10,000; for injection, 1 in 5,000 to 1 in 6,000. This treatment is carried out until the thick discharge is changed to a watery one, usually in the second week. After this it is persisted in, if the infection is limited to the anterior portion of the urethra, and the strength of the lotion may be increased to 1 in 5,000 or to 1 in 6,000. But if acute posterior symptoms occur (a watch

must be kept all the time for them) the type of irrigation or injection must be changed at once from anterior to posterior. In either case the patient must again be taught what to do, the chief lesson to be learnt being how to relax the compressor muscle. I found the best way to teach this was to describe simply what happens during the act of micturition and to make the patient understand that if he will imagine he is urinating and is letting his urine dribble away while the urethra is full of lotion, the lotion will run into the bladder. With these instructions most patients learn the knack surprisingly quickly. The douche-can is raised to a height of 180 cm. above the penis to assist by increase of pressure, but should never be higher.

If a syringe has to be used, then a capacious one must be ordered. It is utterly useless for patients to go on injecting the anterior urethra with a small syringe, as so many do, when the posterior is involved. The patient must be thoroughly coached in the use of it and be made quite familiar with it. A syringe should have a capacious barrel and be of such a size as to be easily used with one hand; but a rubber bulb with suitable nozzle is the most handy pattern. It is always well about this time, or even earlier, to make an examination of the prostate, vesicles and Cowper's glands and to note their condition. One can then always appreciate any subsequent changes. The prostate varies very much in normal people. It can become affected in a slow insidious manner in gonorrhœa, without any obvious symptoms. A prostate that felt normal at first, may later on show a distinct nodule or enlargement, without the patient or the doctor having suspected any change. Early routine examination is therefore recommended.

At this time, too, periodical microscopical examination of the discharge should be made for signs of secondary infection. If this is present, irrigations of mercury oxycyanide (1 in 8,000) should be ordered for a few days, or a mixture of Condy's fluid (1 in 6,000) and mercury perchloride (1 in 30,000) in equal parts; later the permanganate solution may be substituted.

B.—Subacute and Chronic Stages.

All the above treatment is the routine for ordinary acute anterior or posterior infections. Now, as to the further treatment of the same class of case. If the case remains anterior, when the acute symptoms have quite subsided (usually in the third week), the surgeon proceeds to dilatation of the urethra with straight steel sounds, increasing the size gradually until at least a 28 F. or 30 F. can be passed; this should be done twice a week. Dilatation is done for four reasons:—

- (1) By stretching the walls of the urethra, to open up the mouths of the follicles.
- (2) By acting as a mechanical masseur, to express discharge from the follicles.
- (3) To stimulate the circulation by acting as a foreign body.
- (4) To prevent and cure infiltrations.

If the meatus is too small and the surgeon has not a Kollmann dilator, meatotomy should be done. As all cases will need dilatation for a cure, meatotomy will be required for all patients with small meatus.

It is a good rule not to pass any sound if there are any acute symptoms, either anterior or posterior. If the infection has not remained confined to the anterior portion of the urethra, one should proceed in about the fourth or fifth week to posterior dilatation; and, if the prostate has become involved, to prostatic massage, both given on the same day, twice a week. The best guide to massage at first is the tenderness of the prostate; if the gland is very tender it should be left alone for a while; if not very tender very gentle pressure should be used. Later, when there is little or no pain, but palpable evidence of thickening or enlargement, massage may be more vigorous. The same applies to the vesicles and Cowper's glands. Irrigation is, of course, carried out twice a day all the time. The stronger Condy's fluid (1 in 6,000) is usually sufficient. For secondary infection, as previously mentioned, a mercury preparation is needed. In the final stage, when there is only a gleet, zinc sulphate (1 in 1,000 to 1 in 2,000) is useful, or zinc permanganate (1 in 6,000); in this stage, too, injections and instillations of silver nitrate (0.5%) will sometimes be of benefit, but should not be too long continued.

The above treatment is all that is necessary to cure a certain number of patients, but it is all necessary. Some patients will maintain continuous improvement until cured; but if, at the end of seven or eight weeks, the patient is not nearly well, or if the condition is stationary or has relapsed, special treatment must be begun for some condition or complication which has undoubtedly occurred. Then, unless the practitioner has the necessary instruments and knowledge, he should not persist longer, but should advise the patient to seek expert advice and treatment. He has not only done his best, but gives his patient a chance of getting cured before the disease is too far advanced. The patients appreciate it in the majority of cases.

The specialist often sees patients who have got tired of their lack of improvement and who assert that the doctor who treated them "did not know his job" and should not have gone on treating them. It is far better for the doctor's reputation to send the patients away early than too late. He is bound to get many good results and if he gives care and attention to every case and evinces his interest in their disease, they soon begin to trust his judgement and are willing to follow his advice.

I have no time in this paper to deal with any of the complications. My object has been to state what, in my opinion, is the least that should be done for the uncomplicated case and to lay stress on the important points.

THE PSYCHIC FACTOR IN MEDICAL PRACTICE.¹

By T. H. R. Mathewson, M.B., Ch.B. (Edin.),
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The psychic factor has been operatively manifest since the cradle of our existence. In the infancy of our race there were neither doctors nor drugs; the cure of disease was attributed to the influence of the

stars, to divinations and to incantations. Even when the practice of healing passed from the East into Egypt and thence into Greece, it was confined exclusively to the temples. Diseases were believed to be due to the anger of the gods and prayers with ceremonies of pomp and mysticism, all of such a nature as to act vividly upon the imagination and emotions, were used to propitiate heaven in favour of the sick. At a still later period magic and medicine were almost synonymous terms. A word scrawled upon parchment, for instance, would cure fevers, a hexameter from the "Iliad" of Homer cured gout, while rheumatism succumbed to a verse from "Lamentations."

While medicine has shed many of its fancies and beliefs, the psychic factor is still largely operative in medical practice and every practitioner takes account of it to a greater or less extent in the treatment of every patient. Recent psychological research, however, has thrown so much light upon the aetiology and treatment of the so-called functional nervous disorders that I thought we should attempt to define our attitude with regard to the new psychological methods. These methods have for a long time been regarded with considerable suspicion by members of the profession and rightly so, since every medical mind rebels against the conception of disease without structural change. It is owing to the neglect of these psychological methods by the medical profession, however, that many sick people have been forced to seek aid from the Christian scientist, osteopath and other "healers."

Pottinger, in the introduction to his latest book, complains that parts of medicine have been emphasized at the expense of the whole and he appeals for a constructive unification of medical practice. "There is no study," he says, "that offers us greater hope for the future practice of medicine than the study of the individual who has the disease and of the means by which the disease expressed itself."

It is commonly believed that treatment by psychological methods is synonymous with treatment by suggestion, but suggestion, whether made under hypnosis or not, is often the least effective weapon at the disposal of the psycho-therapist. This is to be expected, since suggestion makes no attempt either to discover the source of the neurosis or to re-educate the patient.

It is scarcely necessary to say that treatment by psycho-therapy does not infer a total disregard of all physical conditions present. A thorough physical examination of the patient must be made even when he is sent on by another physician in order that the psycho-therapist may be able to speak to him with a feeling of greater assurance and that the patient may be inspired with greater confidence. Whilst we recognize the importance of discovering the presence or otherwise of any abnormal physical condition and of treating it when necessary, we ought not to neglect the psychological aspect of the case from the first. In a case in which we do discover a physical defect, we ought to determine to what extent it is responsible for the condition of the patient. In practically every case of organic disease, there is a functional element and this may become the more important from the point of view of treatment.

¹ Read at a Meeting of the Queensland Branch of the British Medical Association on June 4, 1920.

Frequent and unnecessary physical examinations or the discussion of the possibilities of disease in his presence, may do incalculable harm to a patient suffering from a neurosis. Sir James Mackenzie tells of a young man who, noticing an irregularity in his pulse, became concerned and consulted a specialist. The electro-cardiograph recorded a peculiar type of irregularity which the specialist did not understand and over which he shook his head, telling the patient that probably it meant nothing, but that he had better be careful. This vague advice rendered the patient nervous, so he gave up his work and took a lighter position in order that he might spare his heart as much as possible. He walked about carefully for short distances and found himself becoming more easily exhausted; he suffered from palpitation and was quite sure that his heart was getting worse. Mackenzie recognized that he was suffering from the youthful type of irregularity—a physiological phenomenon—and was able to assure him that there was no need for alarm. The whole train of symptoms, as Mackenzie remarks, was apparently the outcome of fear produced by the vague prognosis given by the specialist. All of us can probably say that cases of a similar nature have come under our notice.

Those who accept the psychogenic theory of the neuroses, do not maintain that the causes which we now call psychological, may not ultimately be capable of expression in anatomical and physiological language. They do maintain, however, that in the present state of our knowledge the only satisfactory way in which the processes that occur can be expressed, is in terms of psychology.

If we are to treat the neurotic patient successfully, we must study his personal development and his orientation to his environment; in other words, these cases can only be attacked successfully by studying the individual himself. Modern psychological research has shown that we cannot satisfactorily explain the self in terms of James's stream-theory of consciousness. The psychology which for a century has been content to confine its investigations to the conscious mental foreground of the individual, is now compelled as the result of psycho-analysis and psychical research to take account also of the mental hinterland. Modern psychological research has further shown that though the infant's mind at birth is, without any ideas, it is by no means void of all characters. The individual comes into the world possessed of special instinctive capacities which enable him to fulfil the ordinary purposes of living, for instance, nutrition. He is also possessed of general capacities, the most notable of which we term intelligence. These instinctive and general capacities are presented to him by the race. They represent the crude, undeveloped material of the individual self.

Even if we consider that these capacities are conditioned by physiological structure, there remains the important question of the effect which education and environment are going to have on such capacities whose function both physiologically and psychologically is to bring the individual into relation with his world. As Elton Mayo has said: "In all neurotic affections the lack of relation between the individual and his race-consciousness manifests itself as a lack

of relation between the individual and his world." Taking the adult development as the norm, we find that every neurosis marks a failure in the adaptation of the individual to his environment, a failure which has persisted into the adult stage. Infancy and youth, representing periods of incomplete development, ought therefore to be regarded as being equivalent for all practical purposes to manifestations of a neurosis. Likewise the savage—the so-called natural man—ought to be regarded as something less than normal; his adaptation to his environment being defective, he displays by his practices of magic, ritual and the like, all the signs of an obsessional neurosis. This is shown by Freud in "Totem and Taboo." From this point of view, therefore, a condition of savagery might also be regarded as equivalent to a neurosis.

In our development we may either expend our mental energy on the early gratification of instincts, or we may inhibit their immediate gratification not so as to repress them, but rather so as to sublimate them. By sublimating them we postpone their gratification in order that we may be able to devote the mental energy accompanying them to activities of greater social value. This is the essence of civilization.

There is no doubt that in many instances civilization is misconceived as a process of repression, with the result that many individuals fall into mental conflict and neurosis by the way. An antagonism between what Jones calls the individual and non-moral endowments with which the child is born, and the inhibiting forces which make for adjustment to the standards of society, is evident in the early years of childhood. The fact that the primordial tendencies are not allowed direct external expression, however, does not mean that they are abolished. If the energy associated with these instincts is not drawn off and sublimated in the direction of higher development in the way we have already indicated, it may be repressed into "underground" activities. A study of these underground activities furnishes us with a key to the understanding of numerous neurotic manifestations which were previously incomprehensible.

Let it be clearly understood that an instinct cannot be killed or abolished. If it does not find expression in the life of the individual, but is repressed into the deeper levels of consciousness, it will assuredly find expression in some form of neurosis. The remedy for a neurosis brought about in this way is to develop the repressed capacity in such a way that it finds full expression in the life of the individual in a sublimated form. In the examination of the neurotic patient, therefore, our object is to discover not the mental anguish in the upper level of consciousness, although we do this incidentally, but the conflict in the deeper level which has caused the neurosis. It is a normal function of the mind of every individual to forget or repress the memory of the details of psychological events and to retain for further use only the knowledge of the significance or meaning of such events. Events are forgotten either because they are merely irrelevant to the general trend of the individual's development, or because they are

unpleasant. If an incident or idea is repressed because it is unpleasant, it must be regarded as abnormal and as the possible source of a neurosis.

As the result of his researches Janet was able to show that the so-called anæsthetic patches of the hysterical patient are not truly anæsthetic; sensibility and power to move still reside in the hysterically paralysed limb. The inability to feel or to use the limb is due not to any disturbance in the limb itself, but to a so-called "split" in the consciousness of the patient, the control of the limb having become located in a portion of consciousness dissociated from the rest.

"When Lucie talks directly with anyone," says Janet, "she ceases to be able to hear any other person. You may stand behind her, call her by name, shout abuse into her ears without making her turn round; or place yourself before her, show her objects, touch her, etc., without attracting her notice. When finally she becomes aware of you, she thinks that you have just come into the room again and greets you accordingly. This singular forgetfulness makes her liable to tell all her secrets aloud, unrestrained by the presence of unsuitable auditors."

The latest achievement of modern psychological research is the discovery that this dissociation is caused by a process of repression following a mental conflict. The conflict is between two sets of ideas, which are mutually inconsistent. It terminates not in sublimation but in repression. The repressed desires cannot be altogether repressed and therefore combine to find expression in the anæsthetic areas and in other physical and mental symptoms. The variable and unintelligible symptoms and perverse behaviour of the neurotic patient become explicable when it is recognized that they represent the distorted and symbolic expressions of repressed complexes and of hidden and forbidden wishes. The morbid interest of the prudish, elderly, maiden lady in births and marriages and her exaggerated affection for dogs and cats, the disguising of a bitter sorrow or disappointment by the display of feverish activity; these also are the distorted expression of repressed capacities. An individual whose "life force" has failed to find satisfaction in the multitudinous trivialities of her life and who yearns to find expression in high social or matrimonial ideas, may flee from reality and take refuge in a neurosis.

It will, I hope, have become clear that in every neurosis there occurs, in however mild a degree, a condition of mental disintegration; the various mental functions are not working harmoniously together and there is in consequence a lack of harmony between the individual and his environment. This disharmony is characterized by conflict, repression, and dissociation. Mental disintegration manifests itself chiefly in two forms. In one case the mental elements are apparently converted into physical symptoms, as in "conversion hysteria"; in the other case the mental elements remain mental and show themselves in the form of fears or anxieties, as in "anxiety neurosis." For the purposes of this paper I shall consider the neuroses as exhibiting one or other or both of these forms of disintegration. Psychasthenia, the

name given by Janet to the condition of functional nervous disorder accompanied by extreme exhaustion, is present to a greater or less extent in every case. In conversion hysteria either objective or subjective symptoms may predominate. All of us are familiar with hysterical contractures, ties and tremors which are instances of objective conversions; subjective conversions are even more common, but their true nature is often unrecognized.

While combating the anxiety present in a case of conversion hysteria, the physician should commence the patient's training in relaxation almost immediately, beginning, as Strangman points out, with the group of muscles from which the condition originates. Once the patient has mastered relaxation, the normal function of the part soon returns. In the treatment of paralysis and contracture the patient must be taught to keep his limb in a natural position of rest when he is not actually using it. The tone of a muscle adapts itself to new postures very rapidly and in favourable cases a limb which has been in an abnormal position for a year or more, returns to the natural one in a course of a few days.

Hurst remarks: "When hysterical paralysis with or without contracture has persisted for some months and psycho-therapy leads to rapid recovery, it is often observed that, although the patient is able to perform every movement in a perfectly normal way, at the end perhaps of an hour he tends to maintain the abnormal posture which was caused by the paralysis and contracture directly his attention is withdrawn from the affected limb. The abnormal posture is not only maintained during consciousness, but it also persists for a time during sleep and during anaesthesia." Hurst believes that the explanation is to be found in what Sherrington has described as postural length and postural tone. Under normal conditions the position of a limb at rest is maintained as a result of the tone of its muscles, the exact position depending upon the relative tone of the extensors and flexors. The fingers, for example, are normally slightly flexed and remain so not only during the waking state, but also during sleep and during anaesthesia. Each individual muscle fibre has a certain degree of tone when at rest; as for the greater part of every twenty-four hours it is at rest, its anatomical structure adapts itself to this tone, but it is capable of becoming shorter as a result of active contraction and longer as a result of active relaxation.

The soldier suffering from shell shock may be afraid to fall asleep owing to his fear of nightmares, even though he admits that his fear is groundless. Eventually, when he does fall asleep, the sleep is not sound, for he is "on guard" and, waking with a start, he springs almost out of bed. When such a patient is able to fall asleep in a condition of complete mental and physical relaxation, he sleeps soundly. In many cases of hysteria, especially in civil practice, one cannot cure the neurosis by merely removing the physical symptom present; for example, the contracture. A contracture is, after all, but one manifestation of an underlying psychopathic condition. It seems to me that the main difference between the neurotic soldier and the neurotic civilian is that in the case of the soldier the neurosis has a shorter his-

tory, having arisen during adult life in an individual who in most cases had developed in a normal manner, while in the case of the civilian the neurosis in most cases has had its origin in childhood and, as the result of abnormal development, has led to a failure of adaptation to the environment which is the essential feature of every neurosis. The removal of a symptomatic contracture no more cures a neurosis than the relieving of pain cures appendicitis. Whether the patient be soldier or civilian, however, the chances of relapse will be far less after an adequate mental analysis has been carried out. "It is a general rule of medicine," say Rivers, "that the physician must not be content to treat symptoms, but having traced these symptoms to their source, should by suitable remedies attack this source and treat the symptoms through the conditions by which they have been produced. This principle holds good for psychological medicine. If it is believed that the symptoms have been produced by psychical factors, it will follow that the remedies must also be psychical in nature. I do not suppose that even the crudest materialist, having once acknowledged that the symptoms depend upon a fright in childhood, a reproach concerning a misdemeanour in youth, or an anxiety in adult life, would expect to produce any permanent improvement by the administration of a drug or the performance of a surgical operation."

The treatment of a case of anxiety neurosis which is associated with a great deal of "free, floating anxiety" attaching itself to one idea after another, is not to be lightly undertaken. Freud, who originally separated this condition from "neurasthenia," found the causes to be not psychical but physical, consisting of incomplete satisfaction of physico-sexual needs under circumstances when these were excited. In other words he assigned the cause of the condition to undue afferent excitation and insufficient efferent discharge. In a later paper, however, he emphasizes the importance of the psychical causes of the condition. He believed, for example, that a neurosis followed the renouncement of masturbation, unless a healthy outlet were found for the physical energy thus set free. The associated mental energy had also to be accounted for and unless this could find adequate expression in wholesome interests, it would manifest itself in the form of fears and anxieties.

In cases of anxiety neurosis the thought processes may be either hurried and agitated, one idea chasing another, or there may be a total blocking of all thought processes. One patient told me that all kinds of thoughts flitted through his mind in rapid succession, each one tinged with anxiety; he always feared the worst. Whenever an action was suggested to him, his mind created a series of difficulties which stood like an impassable mountain between him and its performance. It is useless to attempt to persuade such a patient that his fears are groundless, for much of his distress arises from his inability to control fears which he realizes are foolish. The reason why morbid fears cannot be removed by an appeal to the patient's conscious processes, is that their cause lies deeper, namely, in the unconscious, and it is the work of the psycho-analyst to discover this cause.

It is beyond the scope of this paper to enter into a discussion of the methods of psycho-analysis, but they may be summarized as follows: By means of association tests and dream analysis and occasionally, if the repression is very strong; by means of analysis under light hypnosis (the need for the latter diminishes as the psycho-analyst becomes more expert), psycho-analysis, to quote Jones, "attempts to make the patient aware of the unconscious complexes that lie at the basis of his symptoms, thus enabling the pathogenic agents to be assimilated in consciousness. This is achieved by discovering and surmounting the internal resistances which are the cause of the repression and which prevent the patient from recognizing and assimilating the pathogenic mental processes. Furthermore, since the analysis is not confined to the unconscious complexes immediately connected with the symptoms, but deals equally with the whole of the repressed material in the patient's mind, its action extends beyond the field of purely medical indications and gives the patient an inner control and self-insight that are not only the best guarantee against any tendency there may be to relapse into a neurotic state, but also the soundest basis for the general guidance of his life in the future." Psycho-analysis attempts to release the repressed impulse from its fixation on the wrong object and by a process of re-education to attach it to the right object, a process which I have already described under sublimation.

In civil practice it is not easy to create the atmosphere of cure which Hurst and other writers consider important in the treatment of these disorders. At the commencement of the treatment it is advisable, however, to isolate these patients from their relatives and friends who are continually adding to their misery by advising them to cheer up, or by telling them that their complaints are imaginary and that they must not "give in." Weir Mitchell treatment alone may suffice to effect a cure in a few cases which are due primarily to physical and nervous exhaustion, but to attempt to cure a patient suffering from an anxiety neurosis by merely isolating him would be like trying to cure a patient suffering from a new growth by removing the external sources of irritation and leaving the new growth.

We, in Brisbane, shall be handicapped in the treatment of these patients until we are in possession of a hospital or home suitably situated and adequately staffed to which the patients can be removed, in order that their cases may be properly investigated and treated. Such a hospital should provide opportunities for suitable work for the patients during convalescence and attached to it should be an out-patient department, to which those who are unable to afford private medical attention, should have access.

It is unfortunate that the psycho-therapists of different schools regard themselves as rivals. Far too often the psycho-therapist understands one method well and on this basis proceeds to deny that any other method has any value whatever. So we find followers of Dubois decrying Freudians, Freudians objecting to Jung, psycho-analysts disdaining the methods of the hypnotists. The practising psycho-therapist finds that he can make use of every method;

in one case Dubois is most helpful, in another Freud. If the psycho-therapist is to be successful, he must be prepared to make use of all methods which show themselves in practice to be relevant to the work he is doing.

The application of these methods to the treatment of nervous disorders will be observed in the following cases:—

CASE I.—J.W., a returned soldier, a cabinet-maker, aged 27 years.

The patient had a "paralysed" left hand, partially useless for two years, completely useless for 10½ months. He suffered from so-called "epileptic" fits, the attacks becoming gradually more frequent over a period of 4½ years. In the first year he had perhaps six such attacks; in the week previously to coming into hospital he was reported to have had fifty-two. In a military hospital, while under observation, he had approximately 10 to 20 attacks weekly.

The history and analysis showed that the patient suffered from fear of the after-effects of cerebro-spinal meningitis, contracted in camp 5 years before. After half an hour's explanation and persuasion he was able to use his hand, though somewhat stiffly. Four months have elapsed since treatment was begun and he has not had any "fits" since. When last heard of he was cheerful and had returned to his work.

CASE II.—W.S., a returned soldier, a university graduate and teacher, aged 26 years. After serving in Gallipoli he was discharged from the army for "mental unsoundness."

The patient's life had become a burden to him by reason of his inability to come to a decision about anything. He looked for "leadings" to tell him what he should do. The disorder was not caused by the war and was ascribed by the patient and his relatives to overwork at school.

Analysis revealed an Œdipus-complex, which originated between the ages of 3 and 11 years. The repression of this complex rendered the patient unable to "make love," though he had made at least several attempts to do so. The repression and indecision in this matter had communicated itself to all the other affairs of the patient's life. After the analysis the patient was much better able to make decisions and is still improving.

CASE III.—L.B., spinster, a university graduate, aged 34 years.

The patient suffered from "free anxiety," insomnia, attacks of flushing and shivering, diarrhoea and indefinite pains in various parts of the body.

Analysis showed that the patient had completely repressed her normal sex desires into her unconscious. At the conscious level, her mind stigmatized sex as "horrid" and she tended to avoid the society of men she found interesting. At the unconscious level, her mind was possessed by an insatiable and restless curiosity about matters of sex. The repressed curiosity was still infantile and manifested itself in dreams and in anal-erotic exhibitionism. The patient was largely anaesthetic in the sexual areas, hyperæsthetic elsewhere, the hyperæsthesia manifesting itself in the form of fleeting pains and emotional incontinence. An interesting conversation with a companion of the male sex tended to be followed by an attack of diarrhoea.

The re-education in this most interesting case was designed to bring the conscious mind to take an intelligent interest, physiological and psychological, in matters of sex. The treatment was completely successful, the local anaesthesia and general hyperæsthesia disappeared as well as the free anxiety and other symptoms.

Reports of Cases.

TWO UNUSUAL JOINT INJURIES.

By Mary C. De Garis, M.D., B.S. (Melb.),
Geelong, Victoria.

(1) Dislocation of Both Hips.

A Canadian in the English Army Service Corps, attached to the Royal Serbian Army, was admitted to the Scottish

Women's Hospital, Osrovo, Macedonia, at the end of 1917 with both hips dislocated. He had been thrown from the front seat of a motor lorry, which had collided with a Greek cart, and had been caught between the wheels and the cliff. He was brought 11.25 kilometres to the hospital. He was in great pain. The ready-made diagnosis was sent with him of injury to the spine, apparently because of the helplessness of his legs.

On inspection it was obvious that the right hip was dislocated. The condition of the left hip was less certain. I hesitated between the diagnosis of a dislocation and that of a fracture. Measurements were not very helpful. My records of the measurements were later lost in a storm that wrecked our camp. There was, however, apparent lengthening of the right leg and shortening of the left. I regarded the right as being an anterior and the left as being a dorsal dislocation.

The patient was anaesthetized with chloroform without further examination, owing to the intense pain in the left leg. He was then transferred to the theatre and placed on a mattress on the floor. The diagnosis was confirmed and both dislocations were reduced by manipulations, the right one by Dr. Joan Rose and the left one by myself. The left dislocation recurred whenever the test movements for successful reduction were made. Finally no test was made after the reduction. A long Liston splint was applied on the left side and the patient was returned to bed, where he remained for a fortnight or more. He then began very gradually to get about. In eight weeks he was walking well, but with a limp. I met him seven months later and he then walked extremely well, limping very slightly when fatigued. He had seen some very active service in the interval during the advance into Serbia.

My interpretation of the recurrent character of the left dislocation was that the lip of the acetabulum had been fractured. However, an X-ray plate taken at the No. 36 General Hospital at Vertekop, to which he was transferred eight or nine weeks after his accident, showed a definite line of callus extending from the pelvic border obliquely through the acetabulum to the lower border of the ilium. This fracture of the pelvis had been missed in the diagnosis, but, fortunately, the treatment adopted prevented that omission being serious.

(2) Fracture of the Anatomical Neck of the Humerus, with Dislocation of the Head to Inside and Below the Glenoid Cavity.

An Italian soldier, crossing a railway track in a cart, was run into by an engine. He was brought into the Scottish Women's Hospital, Osrovo, Macedonia, about July, 1918, with some concussion and an extensively lacerated scalp wound behind the right ear, as well as what we considered a weakness of the left arm and left leg. He was anaesthetized and the scalp wound was cleaned and sutured. No bone injury was observed. His left leg moved well, while he was going under the anaesthetic, and his left arm moved slightly. We therefore excluded an intracranial injury.

On the following morning his left shoulder was bruised to an extent exceeding anything I have seen before or since. On palpation I detected crepitus. A fracture of the anatomical neck of the humerus was therefore diagnosed and the shoulder was bandaged accordingly. He complained bitterly of pain in this arm. A few days later he was examined with X-rays and the head of the bone was seen to be dislocated, lying beside the humerus.

I decided to excise the head of the bone, but delayed the operation for several weeks, on account of the extensive bruising. Then by a single anterior incision I excised the head of the humerus and closed the wound without counter-drainage, but with a small drain inserted through the wound. This drain was removed on the following day. The fractured surface of the head was found to be closely applied to the lateral border of the humerus; a fibrous attachment had to be divided.

This wound, like that in the scalp, healed by first intention. The relief to him from the pain was immediate; his whole temperament seemed to suffer a "sea change."

On transfer, about three weeks afterwards, to an Italian

hospital, he could elevate his arm nearly to a right angle and move it fairly well below that level.

Owing to the entire absence of a common language, it was impossible to determine the exact muscular and nervous condition of the arm.

FUNCTIONAL CONTRACTURE FOLLOWING APPENDICITIS.¹

By F. Howson, M.R.C.S. (Eng.), L.R.C.P. (London),
Major, A.A.M.C.; Neurologist, First Military District;
Honorary Neurologist, Brisbane Hospital.

K.P.H., ex-corporal, Australian Imperial Force, was operated on for appendicitis at the 17th Australian General Hospital on February 18, 1920. Except for a slight rise in temperature for a few days, the case ran a normal course, the wound healing by first intention. On getting about the patient walked with a slight stoop and experienced some pain in the region of the scar. He noticed that if he flexed his right thigh, the pain was eased; consequently, he kept the thigh flexed. The pain increased in severity and was only eased by bending the back, further flexing the thigh and inverting the foot. He was sent to me on March 31, 1920, and appeared bent almost double (camptocarmia), with a marked *equino-varus* of the right foot and with his left hand firmly pressed over the scar.

On examination I found such an acute hyperæsthesia that any attempt to straighten the foot or back caused him intense agony. No elaborate psycho-analysis was carried out, but in the course of conversation I discovered that, apart from the pain, his chief trouble was an idea that there was still something inside. In addition, he had a morbid fear that he would never be able to stand up straight again. I had him examined radiographically and when he returned a few days later for psycho-therapeutical treatment, he was told that the skiagram showed nothing at all and that his foot would be straight after a week's treatment. Daily relaxation of the muscles was carried out and at the same time repeated suggestions were made to the effect that, as the foot got straighter, the pain would ease off. At the end of a week his foot was straight and the pain almost gone. In a similar way the camptocarmia was treated and at the end of the second week he was perfectly normal. The case is worth recording, as, although camptocarmia and other functional contractures were extremely common during the war, mainly as the result of being blown up by a shell, they are rare so long after the stress of active service is over.

Reviews.

THE CLINICAL LABORATORY.

"The Link Between the Practitioner and the Laboratory," by Drs. Cavendish Fletcher and Hugh McLean,² is a small volume of 90 pages. It contains useful information for practitioners concerning the procedure to be adopted when sending specimens for bacteriological or pathological examination. The objects of the book are briefly stated in the preface. Firstly, to give a list of those diseases in the diagnosis, treatment and prognosis in which the pathologist can be of assistance to the practitioner. Secondly, to state briefly what material should be obtained for each test, how and when to obtain it and how to send it to the laboratory. Thirdly, to give the time which must elapse before a report from the pathologist can be expected. In short, the object of the authors is to enable practitioners to send to the pathologist the right material in the right way. The first half of the book is taken up with an alphabetical list of diseases with directions for laboratory requirements. The tests that are likely to be of use for each particular disease are mentioned and the means of collecting and for-

warding the specimens are clearly and concisely indicated. As the authors point out, laboratories vary somewhat in minor points of routine, but if the advice given were closely followed, not only would the work of pathologists be greatly facilitated, but the results obtained would be much more reliable. Many of the procedures which the authors describe in detail for the use of medical practitioners, such as the collection of blood for the enumeration of red and white cells and for the estimation of hæmoglobin, should certainly be left for the pathologist himself to perform, as these tests are only reliable if carried out entirely by an experienced individual. The authors appreciate this difficulty and advise practitioners to send the patient to the laboratory whenever practicable. The necessity for examining cerebro-spinal, pleural, ascitic and other fluids while fresh is emphasized and the difficulty of cytological and bacteriological examination of fluids that have been removed from the body for some hours is given due prominence.

AN AMERICAN PRACTITIONER.

"Rambling Recollections: An Autobiography,"³ is a book which can do no one any harm to read, but does not contain much to rivet one's attention or to remain in the reader's memory. It is the work of Dr. Rockwell, who, in collaboration with his partner, Dr. Beard, wrote, many years ago, a book on the uses of electricity in medicine and surgery—an excellent book, a trail breaker—and as one of the authors of this work, one is swayed beforehand to find something favourable to say of his autobiography. Frankly, the book must be of much personal interest to the writer's immediate circle of relatives and friends, nay, to quite a large circle of Americans, both medical and lay—but to outsiders, who know nothing of the majority of the people spoken about, the narrative lacks wide interest. It is not convincingly written. It is impossible, however, not to read between the lines and discern in the author a sweet and wholesome personality, loyal, liberal-minded, kind and patriotic in the very best sense. Further, to the present generation of medical men the use of electricity is one of the common events of the medical day—with extended uses, of which the pioneers of this branch of knowledge never dreamt—that we are apt to forget those who made the first advances. These men, Beard and Rockwell, were true pioneers; they lifted their specialty out of the hands of ignorant men or quacks and with no small courage fought opposition and misrepresentation in gaining for it, and themselves, a legitimate place in the treatment of disease. All honour to them. Some of Dr. Rockwell's reminiscences of famous or grossly rich persons are not without interest, although it is doubtful if we, in the British Empire, would feel justified in speaking so freely about their ailments as Rockwell does. He sometimes, however, takes for granted that such and such a person or patient was of international fame. The reviewer has sadly to confess that some of the persons labelled famous are names utterly unknown to him, or at least are not of European celebrity, whatever they may have been in their own country. This is a common fault, not only of Americans, but of Australians as well. We are apt to magnify the local reputation of some very insignificant persons and expect the world to endorse our parochial verdict. In speaking of his professional successes with electricity it is curious, in these days of abdominal surgical certainty, to find him shaking hands with himself over causing the obsolescence of an extra-uterine foetation by the application of an electric current. In his chapters on the civil war, in which he played quite a strenuous part, readers will find not a little to interest them and to compare the man-to-man methods of fighting of the early 'sixties with the *matériel* warfare of 1914-1918. On the whole, however, the book is a disappointing biography. Dr. Rockwell is evidently a good and capable man who has added somewhat in his day to the edifice of therapeutics, but he has not the gift of writing with interest to the outside reader. It is indeed a pleasant souvenir for the family circle, but a little dull for the reader who knows not Joseph.

¹ Read at a Meeting of the Queensland Branch of the British Medical Association on June 4, 1920.

² The Link Between the Practitioner and the Laboratory: A Guide to the Practitioner in His Relations with the Pathological Laboratory, by Cavendish Fletcher, M.B., B.S., M.R.C.S., L.R.C.P., and Hugh McLean, B.A., B.C., M.R.C.S., L.R.C.P.; 1920. London: H. K. Lewis & Co., Ltd.; Crown 8vo., pp. 91, with seven illustrations. Price, 4s 6d. net.

³ Rambling Recollections: An Autobiography, by A. D. Rockwell, M.D.; 1920. New York: Paul B. Hoeber; Royal 8vo., pp. 332, illustrated. Price, \$4.00.

The Medical Journal of Australia.

SATURDAY, JULY 24, 1920.

Pulmonary Affections in Miners.

The interim report of the Commission of Inquiry into the pulmonary conditions in the miners of Broken Hill—which we publish in this issue, establishes several points of pathological importance. For many years it has been held that the inhalation of coal and mineral dust leads to a condition of fibrosis and predisposes to pulmonary tuberculosis. Collis established in 1911 that the incidence of tuberculosis in persons exposed to dusty trades was not higher than that of persons otherwise engaged, except when the dust contained silica or silicates. At first it was assumed that the explanation lay in the fact that the crystals of silica were extremely sharp and hard and that the damage predisposing to tuberculosis was mechanical in nature. Collis demonstrated that non-siliceous dusts, even when of an irritant character, induced fibrosis, but he was able to show that the chronic tuberculosis supervening on pneumoconiosis was determined, not by the mechanical and inflammatory results of irritating dusts, but by some almost specific action of siliceous dust. He concluded that this action was chemical, although he was unable to adduce positive proof. One very striking fact lent weight to this conclusion. Dust containing silicates in the form of blunt and relatively non-irritating crystals, appeared to be just as harmful as dust containing silica. The dust raised in the process of drilling underground in the Broken Hill mines contains lead, manganese and silicates. All these three substances have been found by Professor Chapman and his colleagues in the ash after incineration of the lungs of miners who have died during the past six months. We thus have evidence that the siliceous dust of the mines finds its way into the lungs of the men engaged in drilling underground. It is stated that a pulmonary fibrosis determined by clinical signs and symptoms, is found in only 1.5% of the men exposed to this dust for a period of under ten years. The

incidence of pulmonary tuberculosis among these men is certainly not higher than that of the general population. During the next decade the incidence of fibrosis is nearly three times as great as in the first ten years. In other words the dust at Broken Hill acts very slowly and pneumoconiosis need scarcely be regarded as a prevalent condition until the men have been working at the drills underground for considerably over ten years. Moreover, in the course of the third decade approximately 12% of the men have lungs impaired by scar tissue. The frequency of pulmonary tuberculosis among the miners up to the end of the third decade indicates that the preparation of the soil for the tubercle bacillus is even slower than the action of the dust in causing the pulmonary fibrosis. In actual figures we find that 17.5% of the miners suffer from pneumoconiosis within thirty years of starting underground work, while under 10% suffer from tuberculosis. After the end of thirty years the picture is completely changed. The incidence of tuberculosis is shown to have increased to 22%, a figure considerably higher than that of the men who show signs of fibrosis. The slowness of the double changes is highly important from the point of view of prophylaxis, but the thoroughness of the work of the silica or silicates is worthy of emphasis. The Commission is guarded in the statement that the dust induces pneumoconiosis and that tuberculosis may supervene.

The dust created by the processes of drilling and blasting at Broken Hill contains lead in addition to silica. Formerly it was held that lead dust in the industries produced poisoning exclusively through the gastro-intestinal tract. From the point of view of industrial hygiene the swallowing of lead transferred by the fingers to food is undoubtedly of great importance. But it can be shown that this is by no means the only way in which lead can be absorbed. Goadby and Legge produced evidence several years ago that lead in the form of finely divided particles could be taken up from the pulmonary surface. This subject has been closely investigated, not only in the case of lead, but also in connexion with other heavy metals. It has been established that the determining factor of the absorption of metallic dust is the size of the particles. Very finely divided dust presents an immense surface to the pulmonary tissues

and fluids and a chemical reaction takes place very readily. On the other hand coarse dust, with its small surface, is subject to but slight chemical conversion. In the case of lead, neither the metallic particles nor the compounds with the protein constituents of the body give rise to severe local changes. In the case of iron, nickel and to a less extent cobalt on conversion into organic compounds within the pulmonary area are induced local changes of an unmistakable character. These metals are not absorbed as metal nor as inorganic salts, although some of the particles have been seen within the polymorphonuclear leucocytes in the tissues. The greater part of the metal is converted immediately into an organic compound which does not respond to the ordinary tests of free metallic kations unless the tissue is first treated with strong acid. As far as we are aware the condition of lead after absorption from the respiratory surface has not been followed and we are therefore compelled to assume by analogy that the metal is taken up in complex combination by the tissue fluids and blood. Goadby and Legge demonstrated that lead absorbed from the surface of the lungs, exerts a toxic effect within the body and is excreted in the urine and faeces. The Commission has found the lead deposited within the lungs in considerable quantities. It remains for the members of the Commission to demonstrate that the state of division is fine enough to permit of absorption and further that the lead, after gaining an entrance into the lungs, is actually excreted in the urine. The problem of the hygiene of the Broken Hill mines is thus shown to be a somewhat complex one. It should, however, not be incapable of proper regulation.

THE SMALL-POX PROBLEM.

The Federal Quarantine authority has recently issued its official warning concerning the existence of variola in New Zealand. It is but a short time since a mild form of this disease spread with considerable rapidity through the unprotected community in the State of New South Wales. It transpired that the form of variola at that time was a peculiarly mild one. The virus was incapable of giving rise to severe lesions and it bred true in a most remarkable manner during the protracted period of the outbreak.

Many bacteriologists hold that the virulence of a bacterium or protozoon can be enhanced by repeated passage through a susceptible host. While it cannot be denied that evolutionary changes can and do take place, there is no evidence that the virulence of successive generations of a single disease-producing organism changes. It can be shown that in a susceptible host the milder forms tend to die out and if the strains include germs of a varying degree of virulence, passage through hosts of this kind would result in the survival of only the more virulent types. The form of variola at present in New Zealand is said to be mild. But there is no guarantee that the virus is of a uniformly avirulent type. Epidemiologists are therefore not justified in ignoring the possibility of the introduction into Australia of small-pox of the severity of the ordinary European outbreaks.

The British habit of neglecting to make adequate preparations to meet a foe extends to disease. We have complete proof of the ability of Jennerian vaccination to protect a community against small-pox. The absurd "conscientious objector" clause of the Act in Great Britain would not have been considered for a moment in any other country. The provision dealing with vaccination in the *Health Act* of Victoria has put the English clause to shame as an example of prejudice and futility. The Health Commission has a very difficult task in consequence. As the body entrusted with the guardianship of the public health, the Commission is bound to adopt those measures which are likely to lead to a low incidence of infective disease. Compulsion cannot be exercised in regard to the one measure known to prevent small-pox. The Commission has therefore drafted the regulations relating to vaccination in such a manner that the average citizen may be persuaded to submit his child to the process of vaccination. There is no doubt that, should variola break out in Australia, panic legislation would be required to stem its spread. In this respect, the people of Victoria would probably not be in a worse plight than the people of any other State. The Victorian regulations that have just been issued, determine that gratuitous vaccination is to be carried out by official public vaccinators at places registered for the purpose. The definition of success-

ful vaccination is adequate. The lesion must cover an area of at least "one half of a square inch," that is 3.22 square centimetres. Public vaccinators receive a fee for vaccination, whether successful or unsuccessful, and for the certificate of two shillings and sixpence. This fee is not paid when remuneration has been received from the patient. Of importance from the aspect of prophylaxis is the form of notice to be served on the parents after the registration of a birth. The parents are notified that they are required to have their infant vaccinated before it is six months of age. They are further informed that they are required to take the child to the medical practitioner who has performed the vaccination, for the purpose of inspection. If the first attempt fails, they must submit the child to a second attempt. Reference is made to the penalties for non-compliance to the regulations. It will be noted that the defects of the Act are skilfully cloaked and that reliance is placed on the probability that the average man will not possess a copy of the Act. It is to be hoped that the sweet persuasiveness of the Health Commission will result in an unmistakeable increase in the number of vaccinations of infants. The expedient is, however, but a make-shift. To protect Australia against variola, every individual should be subjected to at least two vaccinations. In the event of a localized outbreak, the health authority should be clothed with power to order every person who might be exposed to infection, to submit to vaccination. History teaches that half measures are useless and that a community can be rendered practically immune to small-pox by efficient vaccination.

ARSENO-BENZOL DRUGS.

A correspondent has recently raised the pertinent question whether nov-arseno-billon is a more toxic preparation than the other salvarsan substitutes or whether his unfortunate experience should be ascribed to some other cause. It appears that medical practitioners are, as a rule, not well informed concerning the chemistry of the organic arsenic compounds used in the treatment of syphilis. While the work of Ehrlich and of his co-workers at the Frankfurt institution has been available to all who care to read and while other chemical and biological studies have been carried out in various parts of the world, there is much that has still to be ascertained in connexion with these drugs and their pharmacological action. In these circumstances the Medical Research

Committee consulted with the medical departments of the Admiralty, of the War Office and of the Local Government Board and determined in February, 1918, to appoint a committee to consider the methods of manufacture, the biological testing and the clinical administration of the arseno-benzol drugs. The committee has gathered information from many sources. Some of this information has not hitherto been available. The report issued contains an accurate account of what is known concerning these drugs.¹ In the following lines only a few of the main points can be summarized. If a demand is made for a fuller record of the technical chemical and biological details, an exhaustive abstract of the pamphlet will be published in a subsequent issue.

In the course of his investigations on the organic compounds of arsenic, Ehrlich discovered that an increase in the parasitidal properties of these substances was obtained when the pentavalent arsenic acid radicle was reduced to the trivalent arsenious acid radicle. By further reduction arseno-compounds were obtained. Berthelm examined a substance numbered 592 in the series, which proved to be the dihydroxy-diamino-arseno-benzene. This substance forms soluble salts when treated with acids. The hydrochloride was examined as the 606th member of the series. It has since been known as salvarsan. According to its formula, salvarsan should contain 34.1% of arsenic. The article produced commercially contains between 29% and 31%. Ehrlich and Berthelm explained the deficiency as the result of the occlusion of methyl alcohol used as the solvent. Further attempts were made to produce a substance which would be less liable to oxidize on exposure to air. Ehrlich added sodium formaldehyde sulphonylate, a powerful reducing agent, to salvarsan and obtained a compound which was said to be similar in constitution to salvarsan, except that one of the amino-groups was substituted by the sodium formaldehyde sulphonylate. Its composition, however, has been found to be somewhat uncertain and to some extent variable. Galyl was prepared by Mouneyrat by reducing salvarsan in another way. The aminoradicles are replaced by phosphoryl. In the next place various attempts were made by different workers to anchor to the benzene ring side chains of metallic salts. One of these is called luargol. It is salvarsan to which silver bromide and antimony oxide have been attached. From this it will be noted that at the present time the arsenic substances used for the treatment of syphilis are : (i.) salvarsan, (ii.) neo-salvarsan, (iii.) galyl and (iv.) luargol. During the war certain firms were licensed by the British Government to manufacture the substances for which the German owners had taken out patent rights. Salvarsan was prepared under the following names: Kharsivan, arseno-billon, diarsenol and arseno-benzol. Neo-salvarsan was produced as neo-kharsivan, nov-arseno-benzol and so forth. The American pharmacologists are seeking to introduce the non-protected names of arsphenamine and neo-arsphenamine, in

¹ Reports of the Special Committee upon the Manufacture, Biological Testing and Clinical Administration of Salvarsan and of its Substitutes. No. 1. National Health Insurance, Medical Research Committee, Special Report Series, No. 44, London, His Majesty's Stationery Office.

order that the difficulty of protected names and trade marks may be overcome.

From the chemical point of view no ascertainable differences exist between the substitutes and the original preparations. It has, however, been found that in spite of the most careful methods of preparation and the introduction of chemical tests, some samples of salvarsan or its substitutes exert a toxic action in excess of the usual action. It must be clearly understood that salvarsan is a powerful poison and that its safe use depends on meticulous care on the part of the practitioner applying it. Ehrlich recognized that it was essential to test each batch of salvarsan on animals. He employed subcutaneous injection of a solution of 1 in 150 into mice. At the outbreak of war, the British Government recognized the necessity of caution in regard to the salvarsan substitutes issued for use both in the Army and for civilians. The Board of Trade made arrangements with the Medical Research Committee to have biological tests carried out. After a short period, during which subcutaneous injection was employed, it was determined that intravenous injection was more satisfactory, especially in view of the small supply of mice available. Apparently the drug underwent partial precipitation in the subcutaneous tissues. It was at that time impossible to ascertain whether Ehrlich had introduced any special method to avoid this deposition of arsenic in complex combination in the tissues. Rabbits were used at first and the tests were so adjusted that the wastage of animals would be as small as possible. It would appear that the tests suffered not inconsiderably because of the necessity of restricting the number of animals. It was found that two distinct forms of toxicity could be induced with some of the samples. In the first place some of the rabbits died of collapse immediately after the injection. Later it was found to be better to carry out intravenous injections into mice. It has been established that when used in 1% or 2% solution, salvarsan is tolerated by mice in doses of 0.15 mgr. per gramme body weight. Unsatisfactory samples killed in these doses. Delayed toxic effects were less common in mice than in rabbits. The committee does not seem to attach much importance to delayed symptoms for valid reasons. A working standard for the biological tests was set up as a result of experience and there is reason to believe that this standard is effective in excluding all samples too dangerous for use. It may be that samples that might have been used with reasonable safety in man, were rejected. The salvarsan substitution products prepared by Messrs. Burroughs Wellcome & Company, Messrs. May & Baker and Messrs. Evans Sons, Lescher & Webb in Great Britain and by the Synthetic Drug Company in Canada have been tested and are still being tested in accordance with the biological standard by the employees of the Medical Research Committee. All batches offered for sale by these firms have been found to be free from toxic properties. Again it is necessary to call attention to the fact that salvarsan, if allowed to become oxidized, acquires toxic properties which should preclude its therapeutic employment. Whether biological tests

should be repeated in Australia, to detect dissociation or oxidation, remains to be proved.

Neo-salvarsan and its substitutes have also been subjected to chemical and biological tests and standards have been set up. The samples of nov-arsenobillon, for example, offered for sale by Messrs. May & Baker, have been found by the Medical Research Committee to be satisfactory. It must be accepted that this preparation is identical or almost identical with neo-salvarsan and that it has the same therapeutic action and the same toxicity. The committee has endeavoured to ascertain the relative value of the various preparations. Naturally no comparisons can be drawn between the action of the salvarsan drugs and that of the neo-salvarsan drugs. Of the efficacy of salvarsan to cure syphilis there is no question. Reinfections were so rare when syphilis was treated with mercury alone, that it may be questioned whether the few instances recorded were not in reality relapses. On the other hand, reinfection after treatment with the arseno-benzol preparations is common. The committee finds that the British and the French preparations are as active as the original German salvarsan. It would even seem as if khar-sivan were slightly less likely to give rise to toxic symptoms, although the committee is very cautious in expressing a definite opinion.

The therapeutic effect of galyl is shown to be less satisfactory than that of salvarsan or neo-salvarsan, at all events in the doses recommended. At the Cherryhinton Military Hospital in Cambridge it was found that the percentage of patients whose serum yielded a positive Wassermann reaction after the course of treatment, was considerably greater in the primary and secondary stages in the galyl group than in the arseno-benzol group. There was no patient in the tertiary stage whose serum yielded a negative result after treatment with galyl, while in one patient out of a group of 27 treated with other arseno-benzol drugs the positive reaction disappeared. Some observers have found neo-salvarsan in doses of 0.9 gramme more effective than galyl in doses of 0.4 gramme. It is possible that larger doses of galyl may prove more satisfactory.

In the last place it is necessary to refer to the precautions recommended to prevent untoward results of these arsenical substances. The committee regards the most important precaution to be the sterilization of all solutions used for intravenous injection. The committee recognizes that freshly distilled water from a still with a hard glass condenser is imperative. The usual practice of collecting water in a glass flask is advocated. It has been shown that water stored in a flask is exceedingly liable to become infected. Subsequent sterilization in the autoclave does not remove the dead bodies of the adventitious bacteria. There is no inherent difficulty in constructing a still so that contamination becomes impossible. The receiver can be joined to the condenser to form a closed system. The water required for use can be drawn off through a sterilizable tap or tube without causing unfiltered air to be sucked into the vessel. The second recommendation is that the solution of the salvarsan must be perfect before any alkali is added. The quantity of alkali should be

slightly in excess of that needed to reclarify the fluid. Saline solution and not water should be employed both before and after the salvarsan is injected. Lastly the concentration of salvarsan should not exceed 0.1 gramme in 25 c.cm. of fluid. That of neo-salvarsan may be as high as 0.9 gramme in 5 c.cm.. Directions are also given in regard to the proper dosage and intervals between the doses.

Congress Notes.

The date of the Australasian Medical Congress is August 23-28, 1920.

The official address of the Congress is: The Honorary Secretary, 11th Session, Australasian Medical Congress, B.M.A. Building, Adelaide Street, Brisbane.

The following are the Local Secretaries in the several States:—

New South Wales: Dr. F. Brown Craig, Macquarie Street, Sydney.

Victoria: Dr. A. Leo Kenny, Collins Street, Melbourne.

South Australia: Dr. F. S. Hone, North Terrace, Adelaide.

Western Australia: Dr. W. Trethowan, 267 St. George's Terrace, Perth.

Tasmania: Dr. E. Brettingham Moore, Macquarie Street, Hobart.

New Zealand: Dr. G. Bruton Sweet, Remuera Road, Auckland.

Queensland: The Honorary General Secretary and the Coadjutor Secretary, c/o. Queensland Branch, British Medical Association, Adelaide Street, Brisbane.

The following is a list of the Honorary Secretaries of the Sections:—

(i.) **Medicine:** Dr. Andrew Stewart, Wickham Terrace, Brisbane.

(ii.) **Surgery:** Dr. Donald A. Cameron, Wickham Terrace, Brisbane.

(iii.) **Obstetrics and Gynaecology:** Dr. Lillian V. Cooper, George Street, Brisbane.

(iv.) **Pathology and Bacteriology:** (In place of Dr. A. W. Dean) Dr. J. V. Duhig, Wickham Terrace, Brisbane, and Dr. A. Breinl, Institute of Tropical Medicine, Townsville.

(v.) **Public Health:** Dr. J. S. C. Elkington, Federal Quarantine Department, Brisbane.

(vi.) **Ophthalmology:** Dr. J. Lockhart Gibson, Wickham Terrace, Brisbane.

(vii.) **Otology, Rhinology and Laryngology:** Dr. W. N. Robertson, Wickham Terrace, Brisbane.

(viii.) **Diseases of Children:** Dr. A. Jefferis Turner, Wickham Terrace, Brisbane.

(ix.) **Naval and Military Medicine and Surgery:** Dr. G. P. Dixon, C.B.E., Wickham Terrace, Brisbane.

(x.) **Neurology and Psychological Medicine:** Dr. T. H. R. Mathewson, Brunswick Street, New Farm, Brisbane, and Dr. J. R. Nicoll, Hospital for Insane, Toowoomba.

(xi.) **Dermatology and Radiology:** Dr. V. McDowall, Preston House, Queen Street, Brisbane.

Section of Gynaecology and Obstetrics.

The Honorary Secretary of the Section of Gynaecology and Obstetrics has issued the following provisional programme:—

Tuesday, August 24, 1920:

10 a.m.—Presidential Address.

11 a.m.—Acute Pelvic Inflammation, Causation and Treatment, by Dr. R. H. Morrison.

11.20 a.m.—Puerperal Infection, Successful Surgical Treatment, by Dr. A. J. Nyulasy.

11.40 a.m.—Acute Pelvic Inflammation, Causation and Treatment, by Dr. H. H. Schlink.

12 noon—Acute Pelvic Inflammation, Causation and Treatment, by Dr. W. Chenhall.

Wednesday, August 25, 1920:

10 a.m.—Combined meeting with Section of Medicine; discussion on the Ductless Glands. Opener for the Gynaecological Section, Dr. Norman McArthur.

Thursday, August 26, 1920:

9 a.m.—Discussion on the More Efficient Supervision During Pregnancy at Ante-Natal Clinics and Child Welfare Clinics. Opener, Dr. T. G. Wilson. Some Points on Clinical Obstetrics, by Dr. J. C. Windeyer.

Friday, August 27, 1920:

9 a.m.-1 p.m.—Miscellaneous papers—

By Dr. Norman McArthur: *Fibrosis Uteri*; Original Methods in the Treatment of *Procidencia Uteri*; Uterus Bicornuate.

By Dr. A. J. Nyulasy: The Supports of the Uterus.

By Dr. R. Worrall: Four Years' Work in the Gynaecological Wards of the Sydney Hospital.

Section of Psychological Medicine and Neurology.

The Honorary Secretary of the Section of Psychological Medicine and Neurology announces the following papers which have been promised:—

Dr. G. Rennie:

(i.) Symptomatology of Transverse Lesions of the Spinal Cord.

(ii.) Psycho-Analysis and its Application to the Treatment of a Case of Mental Deficiency.

Professor A. E. Mills:

Papilloedema.

Dr. W. M. Macdonald:

War Neuroses.

Dr. Ernest Jones:

The Necessity for the Provision of Neuro-Psychiatric Clinics.

Dr. M. Gamble:

Prognosis in Mental Disease.

Dr. P. Lalor:

Feeble-Mindedness.

Dr. J. W. Springthorpe:

(i.) War Neuroses and Their Treatment.

(ii.) Psychology in Medicine.

Dr. W. A. T. Lind:

The Physical Basis for Insanity.

Dr. T. Garnet Leary:

The Psychic Treatment of War Shock as Applied to Stammering.

Dr. A. C. Fraser:

The Pathogenesis of War Neuroses with Special Reference to War Hysteria.

Dr. Ralph A. Noble:

The Treatment of Functional Nerve Disease Amongst Returned Soldiers in the Second Military District.

Dr. Oliver Latham:

Lantern Demonstrations of Microscopic Sections of the Brain and Spinal Cord.

Dr. S. F. McDonald:

The Neurotic Basis of "D.A.H."

Dr. T. H. R. Mathewson:

Cases Illustrating Treatment by Recent Psychological Methods.

The following have promised papers the titles of which are not yet available: Dr. Guy Prior, Dr. Clarence Godfrey and Dr. R. C. Withington.

Trade Exhibits.

The following firms have applied to be admitted as exhibitors at the Exhibition of the Congress:—

Messrs. Burroughs Wellcome & Company; Messrs. Parke, Davis & Company; Messrs. Muir & Neil; Elliott Brothers, Limited; Messrs. Taylor & Colledge; Watson & Sons, Limited; The Surgical Supplies, Limited; Busbys, Limited; The Denver Chemical Manufacturing Company; The Commonwealth Supply Company; Mr. D. G. Bull; Mr. James Little; The Commonwealth Serum Laboratories. The Australian Hookworm Campaign will also have an exhibit.

The Council of the University of Melbourne have accepted with cordial thanks the sum of £500 from Mrs. F. W. Armytage for the purpose of founding an annual prize in memory of her son, the late Bertram Armytage, who accompanied Sir Ernest Shackleton, C.V.O., on his Antarctic expedition. It is understood that the prize will be for original medical research.

Abstracts from Current Medical Literature.

MEDICINE.

(29) Drugless Therapy of Diabetes.

H. S. Stark states that, although diabetes has trebled itself in thirty years, nothing startling in the way of therapy has been evolved during that period (*New York Med. Journ.*, May 8, 1920). To-day, however, diabetes is not the fell disease of years ago. Its ravages are not so frightful as in former days. The problem of diet has been simplified, through a better understanding of food values. Children of diabetic patients before they reach man's estate should be on their guard by eschewing carbo-hydrates in great measure. Such persons should not add sugar to coffee or tea, or else employ it in moderation. Obese and gouty subjects should be ever watchful of the disease. Mental strain and a sedentary existence are factors which make for diabetes. The drug treatment has been a blot on the history of the disease. There is no known specific nor anything approaching a specific. The only drugs which approach the dignity of a specific on theoretical grounds are alkalies for the purpose of combating coma. Opium has a reputation as a curative agent that has been grossly exaggerated. If good results follow its use, they soon become apparent. Two or three weeks will decide the matter. If the urinary glucose does not entirely disappear or markedly decrease by that time, the further employment of the drug should be discontinued. Large doses of opium or its derivatives should be abandoned, as having a pernicious rather than a beneficial effect. The recognition of the participation of the liver, pancreas and ductless glands in the mechanism of glycosuria offered a promising field for organo-therapy. The author treated twenty patients with pancreatic extracts and did not notice any radical improvement other than a better digestion of fats. Thyroid extracts exert no beneficial influence on the carbo-hydrate metabolism. Adrenalin is contraindicated in diabetes, for it reduces sugar tolerance so markedly that it may be said to bring on glycosuria under certain conditions. The writer has found little justification for the employment of pituitary extract. Pluri-glandular therapy has not improved the situation. These random combinations of various extracts are intended to supply the organism with a substance which favours sugar metabolism, being directed, not against the diabetes, but against the glycosuria. Diet is the mainstay of treatment, a diet that allows a patient as much of carbo-hydrates as he can assimilate. Individualization is the keynote of successful dieting. Treatment means control of sugars, not total abstinence from them. A certain measure of whole wheat bread is permitted to the exclusion of gluten bread. Acidosis is frequently incited by a long period of starch-free dieting. Intestinal toxemias

manifest themselves after a continuous over-indulgence in proteins. A diabetic patient who assimilates meat poorly, is worse off than one who assimilates starch poorly. The error of over-indulgence in fats must not be overlooked, as there is a likelihood of acidosis. Over-indulgence manifests itself by acetoneuria, emaciation and fatty stools. The natural requirements and cravings of the economy for all food elements (not excepting water, salts and vitamins) must be considered. Dietetic measures in aged diabetics should never be rigid, otherwise the treatment inflicts more harm than does the disease. Persons engaged in sedentary occupations have food requirements quite different from those employed at hard labour. The danger of acidosis in a prolonged starch-free diet must be borne in mind. Many diabetics excreting large quantities of sugar remain in better condition than do those excreting smaller quantities. Some persons exhibit a different tolerance for different carbo-hydrates. Some individuals can burn up potatoes better than other carbo-hydrates; others can burn up oatmeal by preference. A diabetic may safely continue on a starch-free diet for about four weeks. The caloric cannot be employed as an index of nutrition, or as a basis for computing the food requirements. Feeding based on chemical and mathematical formulae has too often proved to be a therapeutic fallacy. Nature and the laboratory are often at variance where the human economy is concerned. In diabetes complicated by nephritis, it is essential that the tolerance for carbo-hydrates should be established, for there may come a time when proteins must be discarded in favour of starches. In the very severe types of diabetes, the chief aim should be to avert acidosis and to ward off infections. Since two out of three diabetics die in coma, the avoidance of this issue should be of the greatest solicitude. If coma is pending, the patient should be put to bed, kept on a milk diet and oxygen inhalations freely given. A method of anticipating acidosis long before drowsiness, dyspnea, nausea and a quickened pulse appear is available, viz., through the estimation of the CO_2 and air tension of the alveolar air. It has been demonstrated that, if the tension is considerably lower than normal, e.g., if it is 25 mm. or 20 mm., it may be confidently anticipated that coma is impending.

(30) Irritable Heart.

L. M. Warfield and F. M. Smith contribute two studies on the etiology of irritable heart, the value of exercises in its diagnosis and the determination of the fitness of the irritable heart for military service (*Journ. Laborat. and Clin. Medicine*, November, 1919). The authors prefer the term irritable heart, but agree that effort syndrome is better when discussing the disease around patients. Neuro-circulatory asthenia and neuro-circulatory myasthenia are cumbersome terms. Many diseases and convalescence from many other diseases reveal practically the identical

syndrome. However, the cases of true irritable heart have one factor not usually found in other cases, showing a similar syndrome. That is a history dating back years, without definite cause. The victims seem at times to be born with a constitutional inferiority. The least touch of the throttle races the engine. They seem unable to get into gear and carry the load. Exercise under observation is the surest and quickest method of sorting the fit from the unfit. This syndrome is not at all uncommon in men in ordinary life. It does not need gas or high explosive shells to bring it out. These men may be used for certain kinds of limited service, but even the most limited service usually demands occasional work at high pressure and that is what these men cannot do. The safest plan is to reject unconditionally all such individuals. The writers give their experience of graded exercises, being those outlined by Lewis. Army training should begin with graded exercises, such as the training of college men for athletic sports. Graded exercise is valuable in sorting the fit from the unfit, but is not of therapeutic value for the cases of irritable hearts going to the army from civil life. Graded exercises are valuable in bringing to light suspected cases of incipient tuberculosis and also in diagnosing between cases of irritable heart and pulmonary tuberculosis. Of 142 men exercised, 44 were returned to duty. The other 98 were rejected or recommended for certificates of disability. Those returned to duty were picked up in the examining barracks and sent to hospital for observation for tachycardia. They complained of few or no symptoms. The response to exercise was good, with the exception of a few who ultimately developed subjective symptoms. This left an uncertainty as to whether a greater number of these men would finally complain when greater strain was put on them. In a large majority of these men the pulse ranged from 90 to 110 and no cause was found for the increased rate. The 98 who did not qualify for general military service, gave about the same response, but varying in degree. A majority of them complained of shortness of breath, feeling of exhaustion, palpitation of the heart, dizziness and precordial pain on exertion, which dated back to civil life. They did not improve under the exercise treatment, whether they came directly from civil life or were already in the army. These men in the authors' series fall into three groups: (1.) Those in which no cause could be found for irritable heart, (2.) "irritable heart," with toxic or exophthalmic goitre as a basis, (3.) "irritable heart" in which a diagnosis of active pulmonary tuberculosis was made. In (1.) the response was uniformly poor, with no improvement. The patients were men who had never done work which required physical strain. They were exercised and re-exercised for some organic basis for their trouble, but none was found. They were simply constitutionally inferior men. In (2.), those with true Graves's disease had all of

the typical symptoms of irritable heart, while those in the incipient stage of the disease had many of the symptoms. The response in the former was very poor and gradually became worse. In the latter, while the response was better, the toxic symptoms became aggravated. The tuberculosis group could not be distinguished symptomatically from the "irritable heart," in which no organic basis could be found. The asthenia grew more marked with the exercise. As soon as the diagnosis was made, the exercise was stopped.

NEUROLOGY.

(31) Local Paralysis Following Superficial Injuries.

F. M. R. Walshe (*Brain*, Vol. XLII, Part IV.) writes that among the many difficult problems confronting the neurologist must be included a small group of cases of local paralysis after injury to a limb, in which no nerve trunk has been involved. The injury may be trivial, not necessarily a wound and may produce marked paresis or paralysis, with wasting of muscles and diminution of their faradic excitability, impairment of the corresponding tendon-jerk, subjective and objective sensory and vaso-motor disturbances. These signs have a definite anatomical topography and correspond to the innervation of a peripheral nerve. The character of the symptoms is that of a localized neuritis (mononeuritis). Though in every instance progressive, upward extension of the affection is unusual. In every instance the injury was within the territory innervated by the affected nerve and cutaneous nerve endings were either directly injured or overlaid or in some way involved, while the trunk escaped. Sepsis was not an essential factor. Walshe states that it seemed clear that in these cases he was not dealing with a random paralysis, but with an organic disturbance of structures anatomically related. They approximate in type to the condition known as "ascending neuritis," rather than to the muscular reflex affection of acute arthritis and allied lesions. It is probable that a small proportion of Babinski's cases of "reflex nervous disorders" may have been of the same nature. In the absence of any sound pathology of these clinical conditions it is impossible to dogmatize as to the underlying lesion. They indicate, however, that in rare instances the clinical signs of a local neuritis may follow trivial injuries, commonly associated with organismal affection, of the afferent terminations of the nerve affected.

(32) Acute Encephalo-Myelitis.

Creyx (*Journ. de Méd. de Bordeaux*, April 10, 1920) in writing of *encephalitis lethargica*, points to the unsuitability of the terms lethargic and acute encephalitis, insisting that the disease is essentially polymorphic in its manifestations, as in acute polio-myelitis (infantile paralysis). The classical signs may be absent if those regions which are usually attacked

happen to escape; then restlessness may replace lethargy, spasms paralysis. A case is put on record (clinical account only) to illustrate an unusual form of the disease, in which clonic spasms of the diaphragm, sphincter trouble (retention of urine) and delirium constituted a clinical triad. The case is compared with some reported by Sicard and Kudelski under the name "acute myoclonic encephalitis," in which the disease was ushered in by fever and joint pains, followed by delirium and myoclonic movements particularly involving the diaphragm and abdominal muscles. Such cases were very serious from the point of view of prognosis.

(33) Some Notes on Asexualization.

Martin W. Barr (*Journ. Nerv. and Ment. Dis.*, New York, March, 1920) opens his paper on asexualization with some historical notes in favour of eunuchism. He goes on to show that the feeble-minded need protection for themselves and the world from them. They suffer not only from exaggerated sexual impulses, but from inability to control these impulses. Heredity being the primary factor in production, the natural means of arrest is the removal of sexual desire in the unfit. Since 1892, when two patients were sterilized with apparent benefit at the Elwyn training school, Pennsylvania, the legislatures of thirteen States have legalized the asexualization of imbeciles, criminals and rapists. Dr. Barr has carried on the work begun at Elwyn. He prefers the operation of castration for the male and oophorectomy for the female, but if for sentimental reasons removal of the organs is objected to, he substitutes vasectomy or fellectomy. He gives notes of 18 cases of which these are examples: "A's instincts were all bestial; no woman was safe at his hands; language and actions vile beyond description. Was castrated when 19 years old. Marked improvement within a month. Became gentle, tractable and makes a good living as an aid in a hospital." "J.S., a high-grade moral imbecile, had unspeakable habits and was a pronounced sexual pervert. Castrated when 17. Sexual impulses immediately quenched."

(34) Treatment of Causalgia.

Dean Lewis (*Journ. Americ. Med. Assoc.*, January 3, 1920), writing of causalgia, that burning pain which so often complicates wounds of peripheral nerves, reports three cases successfully treated by injections of alcohol, 60%. The nerves affected were the median, internal popliteal and ulnar in the three respective cases. The injection was followed by immediate relief from pain. The ulcers and the chapped, bleeding areas healed rapidly and the paralysis resulting from the injection was temporary. The procedure, as originally suggested by Sicard, consists of exposing the affected nerve, under general anaesthesia, and injecting 2 c.cm. of 60% alcohol into the trunk of the nerve above the site of injury. The method is so simple and the results so satisfactory that it should be the operation of choice in this troublesome affection.

(35) The Pragmatic Method and Insanity.

E. E. Southard (*Journ. of Lab. and Clin. Med.*, December, 1919) advocates that psychiatry should more and more adopt the "laboratory habit of mind," become more and more pragmatic and bring itself into line with the rest of medicine. Seven applications of the pragmatic method to psychiatry are offered: (a) It makes a difference to the patient whether he is seen by a psychiatrist or by a clinical neurologist. There is thus a real difference between psychiatry and clinical neurology, though the future may destroy that difference and produce "neuro-psychiatry." (b) It makes a difference whether insanity is taken as a unit or as a collection of entities. The pragmatic rule decides in favour of a pluralistic view of mental disorders. (c) The principle of orderly exclusion in the diagnosis of complicated cases is of pragmatic value. (d) Especially is this true in the diagnosis of neurosyphilis, where it is important to maintain the non-paretic hypothesis as long as possible, in the interest of the patient's treatment. (e) Opinions might differ as to the advisability of entering the hypothesis of focal brain disease before or after the hypothesis of somatic (non-neural) disease, in a given case. The pragmatic rule might decide one way for a general and the other way for a mental hospital. (f) *Dementia præcox* should be eliminated before manic-depressive psychosis, on the pragmatic basis. (g) The pragmatic method decides that, in the face of complete ignorance of its true nature, involution-melancholia is better placed in the manic-depressive group than in the senile-senescent group, if it is to be placed in either.

(36) The Relation of Herpes Zoster to Syphilis.

Brown and Dujardin (*Brain*, Vol. XLII, Part I., 1919) point out that, while the possible connexion between herpes zoster and chicken-pox has been noted, neither the connexion between herpes zoster and syphilis, nor the condition of the cerebro-spinal fluid in herpes zoster has been studied. They examined the cerebro-spinal fluid in 42 cases of zoster. Cytologically, the results were striking, but inconstant and puzzling. In the majority of cases there was some lymphocytosis, but it varied enormously. In ten cases the counts registered over 50 cells per c.mm., but there was no correspondence with the intensity of the eruption and no explanation for the differences. The albumin and globulin contents remained practically unchanged. As to the relation between herpes zoster and syphilis, a point on which they were well able to form an opinion, since many thousands of cases of syphilis passed through their hands while on military service, they are satisfied that syphilis predisposes to zoster; moreover, in syphilis the zoster has a predilection for the lumbar and sacral ganglia. They also found that, during a course of antileptic arsenical treatment, herpes zoster rarely appeared.

British Medical Association News.

SCIENTIFIC.

A meeting of the Queensland Branch was held at the B.M.A. Room, Adelaide Street, Brisbane, on June 4, 1920, Sir David Hardie, the President, in the chair.

The President welcomed Colonel C. L. Strangman.

A motion of sympathy was carried to Mrs. Huxtable on the death of her husband.

Dr. V. McDowell exhibited a skiagram of a patient who was suffering from gastric ulcer.

Dr. J. G. Avery dealt with a case of extra-genital chancre. The patient, a young man, had had a sore on the outer side of the left thigh for about a month. There was a large, soft gland in the groin. When the patient was first seen it was not thought that the ulcer was specific. Zinc ionization was employed for a fortnight and partial healing of the ulcer took place. A roseolar rash then appeared, together with annular mucous patches on the scrotum.

Dr. L. M. McKillop asked Dr. Avery why he did not excise the chancre on the leg as soon as the diagnosis had been made.

Dr. Avery stated that it was not at first recognized that the ulcer was specific. He did not think it was necessary to excise every ulcer of this kind. Secondary infection might be present and it would be impossible to guarantee a clean wound after excision.

Dr. A. V. Meehan showed three patients in whom he had carried out tendon transplantation for wrist drop due to musculo-spiral paralysis. The tendon of the *pronator radii teres* had been transplanted into the two long extensors of the wrist; while the *flexor carpi radialis* had been transplanted into the *extensor ossis metacarpi pollicis* and the *flexor carpi ulnaris* into the other extensors. Good wrist extension had been obtained within six weeks of the operation. The *flexor carpi radialis* had previously been transplanted into all three extensors of the thumb. Dr. Meehan pointed out that the tendons should be sutured in these operations under tension.

Dr. F. Howson read some notes on a case of functional contracture following appendicitis (see page 78).

Dr. T. H. R. Mathewson exhibited two patients who had been cured of functional paralysis by psycho-therapy.

Dr. J. G. Avery read a paper on "The Treatment of Gonorrhoea by the General Practitioner" (see page 71).

Dr. V. McDowell thought that the general practitioner treating gonorrhoea should invest in a urethroscope and learn how to use it. After a little practice he would be able to detect strictures at an early stage. He thought that the sound was useful in acute gonorrhoea when a profuse discharge was present and the patient was suffering from severe chordee. This was due to the onset of a soft stricture.

Dr. J. H. S. Jackson considered that Kollmann's dilator was of greater value than the ordinary sound for dilating strictures. He maintained that the general practitioner could not distinguish the different varieties of stricture. In some cases of posterior urethritis no abnormality was detected through the urethroscope. Prostatic massage, however, yielded a highly purulent fluid. This fluid had been shown to contain staphylococci, but no gonococci. He wished to know if such a case should be reported or should be regarded as non-gonorrhoeal and non-infective.

Dr. L. M. McKillop advocated dilatation with ordinary sounds for the usual urethral stricture. After the passage of the sounds he tied in a catheter for several days. The results obtained were more permanent than when bougies or Kollmann's dilators were used.

In his reply Dr. J. G. Avery stated that the use of the sound for chordee was not always successful. He held that the employment of the urethroscope by the general practitioner would be ideal, but he thought that in practice the average man did not require one. In his opinion, the use of this instrument should be restricted to the specialist. In reply to Dr. Jackson he stated that the cultivation of the gonococcus was very difficult. An apparently pure culture of staphylococci did not exclude the gonococci. He agreed with Dr. McKillop that it was often useful to tie in a catheter in the treatment of stricture. It was not necessary to use the largest size, which always caused pain.

Dr. T. H. R. Mathewson read a paper entitled "The Psychic Factor in Medical Practice" (see page 73).

Colonel C. L. Strangman congratulated Dr. Mathewson on his excellent epitome of modern thought on psycho-analysis. He could only speak on the neuropathic side of war neuroses. In every case of hysteria and neurasthenia there was a want of relaxation. The patient was never at rest; some of his muscles were always in spasm. There had to be relaxed before any benefit could be obtained. When the patient's mind was taken off the condition, relaxation followed. Persuasion and showing the patient how to relax would cure the majority of these conditions. This could be done quite easily by the general practitioner. It was unnecessary to consider the mental attitude of the patient toward his complaint. The main thing was to influence him. The necessary qualifications—the temper of an angel and the patience of Job—were not possessed by every general practitioner. It was necessary to persist until the patient did something which he thought he could not do. Hypnosis was useful only in those cases in which the patient was unable to describe his mental anxiety or in which the nature of the mental anxiety could not be discovered by analysis. He cited the case of a returned man who had shivering attacks of great fear daily. No impulse could be discovered. Under light hypnosis it was suggested that he should react the scene of the origin of his terror. He went through the action of putting on a life-belt and jumping overboard. He was awakened and was told that his ship must have been torpedoed. The patient acknowledged that this had occurred.

The patient should be shown in what way he was doing wrong and assured that he would soon get better. Colonel Strangman mentioned as an example of muscular spasm the vomiting due to contraction of the recti. If the nature of the condition were explained to the patient, the relaxation of the abdominal muscles would follow. In cases of sciatic pain the adductors and glutei were in a condition of spasm. Forcible bending would cure lumbago. He pointed out that the condition known as "D.A.H." (disordered action of the heart) was in reality caused by spasm of the *pectoralis major*, the *serratus magnus* and the rhomboids.

Success was due to the personality of the medical practitioner. In many cases cure was not attained because the practitioner did not spend enough time in studying his patient. He did not wish to belittle the value of a strict psycho-analysis in some cases. He admitted that dreams should be analysed. But there was an air of mysticism about psycho-analysis which was quite unwarranted. A witty tongue would soon win the patient.

Dr. C. S. Hawkes stated that many patients recovered when their claims for compensation were settled. He agreed that relaxation of spasm was very important. The normally opposing sets of muscles should be placed in a state of stability. In addition, the mental condition should be stabilized, but the speaker thought that it was not necessary to do much analysis to obtain this.

Dr. F. Howson dealt with the advances that had been made in treatment by psycho-analysis as a result of the prevalence of war neuroses. Freud's original hypothesis, that the majority of cases had a sexual basis, had been superseded by the more modern opinion which relegated the sex basis to a position of minor importance. He held that there was no definite line of treatment. Suggestion and relaxation would often effect a cure. If these methods were unsuccessful, psycho-analysis could be used. Hypnosis was rarely needed. It was useful in the detection of shamming, especially in connexion with contractures.

Dr. R. A. Macleod thought that the mental element in disease had been largely neglected. He had been brought up in the old school of psychology. Psycho-analysis was still in the experimental stage. He referred to the case of a patient who manifested the condition of pseudo-rhombegism.

Dr. A. Graham Butler, D.S.O., considered that there was a danger that neurosis would be elevated to a peculiar and inevitable disease of great interest to the relatives and to the general public. He was glad to note that Dr. Mathewson had emphasized the need of self-reliance. Self-knowledge and self-restraint were absolutely necessary. Man's salvation rested on himself and the burden could not be placed on others' shoulders.

Dr. L. M. McKillop thought that neurasthenia, hypochondriasis and hysteria were rare. The symptoms were generally due to some physical condition, such as adhesions involving the colon.

Dr. J. Lockhart Gibson gave the details of cases of amblyopia due to functional causes.

Dr. S. F. McDonald said that the basis of all sound treatment was sound pathology. In functional nervous disorders the only method which gave a sound pathology, was psychoanalysis. He had listened to Colonel Strangman's remarks; he had seen him at work at Rosemount; he had been much impressed by the results he had seen. But the reason why the muscles were in spasm was still unknown. He held that the statement that the muscles were in spasm was no more an explanation than the statement that neurasthenia was caused by a disturbed activity of the ductless glands. They should, however, remember that the neuroses of soldiers were in many cases the products of war strain and fear. The conflicts which these conditions had produced, had passed with the advent of peace. But the symptoms, motor and sensory, induced by them remained as habits. For this reason the breaking down of habits caused the disappearance of symptoms and a return to normal conditions.

Under the conditions of civil life a conflict came to the surface and produced symptoms only during some intercurrent mental or physical depression, such as an unfortunate love affair. Time passed and healed the wound. The conflict was repressed, but the habit persisted. Dr. McDonald considered that in these cases Colonel Strangman's method was of great value. When the conflict had not been repressed, the removal of symptoms was similar to the giving of morphine to a patient with appendicitis. It was necessary to find the cause of the conflict and to remove it. Moreover, in the phobias and anxiety-states there was little muscular spasm and much emotion. These conditions were the most difficult and distressing of all they had to treat. It was the view of many eminent alienists, including Bernard Hart, Maurice Craig and W. C. Stoddart, that the psychoses could only be understood and treated by the adoption of psycho-analytical methods. Dr. McDonald pointed out that advance in prophylaxis must be based on the investigation of pathology by analysis.

In his reply Dr. Mathewson thanked members for their remarks. He admitted that there was no finality on the question. Psychological methods, however, had been placed on a scientific basis. Contractures would be overcome by the methods advocated by Colonel Strangman. Anxiety neurosis, however, required a different explanation.

The following have been elected members of the Victorian Branch:—

Edward Holbrook Derrick, Esq., M.B., B.S., 1920 (Univ. Melb.), Melbourne Hospital.
Francis John Niall, Esq., M.B., B.S., 1920 (Univ. Melb.), Melbourne Hospital.
James Augustus Wall, Esq., M.B., B.S., 1918 (Univ. Melb.), North Road, Garden Vale, Victoria.

The Honorary Secretaries of the several Branches in Australia have received a communication from the Financial Secretary and Business Manager of the British Medical Association to the effect that he has been instructed by the Council to enforce the provisions of By-law 13 (d) as follows:—

Any member whose subscription shall not have been paid on or before 31st of December of the current year, shall, without prejudice to his liability to the Association, be suspended from all privileges of membership and at the end of the succeeding year, if the arrears be still unpaid, he shall *ipso facto* cease to be a member.

It will be noted that as that portion of the subscription of a member of an Australian Branch which has to be transmitted to the central body, must reach London not later than December 31 in any year, members who have not paid their subscription by the middle of November will not receive copies of the *British Medical Journal* issued after the end of the year and will be deprived of other privileges attaching to membership of the Association.

It is with great regret that we learn that Captain Archibald Gladstone Corbett, a 1917 graduate of the Melbourne Uni-

versity, was lost overboard from the Royal Mail Steamship *Orontes* on June 25, 1920, five days after leaving England.

THE ANDERSON STUART MEMORIAL.

A public meeting was held at the Sydney Hospital on July 14, 1920, for the purpose of inaugurating a movement to perpetuate the memory of the late Thomas Anderson Stuart.

Professor A. E. Mills was in the chair and explained to the meeting the proposals which the provisional committee adopted. He stated that the form of the memorial should be the endowment of a travelling fellowship. The fellows should be allowed to take up investigation in any branch of medical science. It was thought that the sum of £10,000 would be required.

Dr. F. A. Bennett, Dr. C. B. Blackburn, O.B.E., and Professor H. G. Chapman supported the suggestion. It was eventually resolved that the proposals of the provisional committee be accepted. An Executive Committee was appointed consisting of representatives of the New South Wales Branch of the British Medical Association, of the University of Sydney Medical Society and of other bodies.

Professor A. E. Mills was appointed Chairman, while Sir Herbert Maitland, Dr. Cecil Purser and Mr. M. Geaney were appointed Joint Honorary Treasurers. We learn that the Executive Committee will shortly publish the details of the proposals and invite contributions to the Memorial Fund.

THE HEALTH OF MINERS AT BROKEN HILL.

The Technical Commission of Inquiry of the New South Wales Board of Trade, comprising Professor H. G. Chapman (Chairman), Dr. S. A. Smith, Dr. W. A. Edwards and Dr. H. S. Halcro Wardlaw, issued the following interim report on the health of miners at Broken Hill on July 12, 1920:

The Technical Commission of Inquiry of the New South Wales Board of Trade appointed by the late Premier, the Honourable W. A. Holman, to examine and to report upon the dust conditions in the metalliferous mines at Broken Hill, to determine by clinical and radioscopic means the morbidity conditions of the respiratory organs of not less than a 30% proportion of the employees in those mines and to ascertain the antecedent pulmonary history of the persons examined and the period of their exposure to the risks of dust at Broken Hill, begs to present to you the following interim report.

Scope of Inquiry.

An investigation has been carried out at Broken Hill during the last six months. Since the mines have not been at work during that period, the Commission is unable to report on the dust conditions prevailing in the mines under ordinary conditions. As the mine workers have not been engaged underground since May, 1919, the Commission has had a favourable opportunity of determining the permanent changes which may have been induced in the respiratory organs as a result of exposure to dust, fumes and other conditions existing within the mines. The Commission has examined 4,000 mine workers at Broken Hill out of approximately 7,500 men usually engaged at work on these mines. A complete medical examination of each person has been made and a sufficient radiographic examination of the chest has been carried out on every person. These examinations have been supplemented by chemical, bacteriological and other tests when they have been required. It has been found necessary to increase the medical staff, so as to complete the examinations by the end of June. Instead of the single physician deemed necessary when the estimate for the Commission was being prepared, seven physicians in all have been engaged in carrying out the medical examinations. Investigations have also been made by a chemical staff into the dust and ventilation of the mines. With the permission of the Central Hookworm Committee of the Commonwealth of Australia and through its courtesy, a unit of the Hookworm Campaign has been made available to carry out a survey of Broken Hill in respect of the presence of ankylostomiasis and the Commission wishes to record its high appreciation of the courtesy of the Central Hookworm Committee for its co-operation in its investigation.

Pneumoconiosis in Miners.

The Commission finds that a condition of pneumoconiosis arises in Broken Hill as a result of the inhalation of dust among those persons who have been engaged in the operations of drilling and blasting underground. The condition of pneumoconiosis arising in Broken Hill is characterized by the presence of fibrous tissue along the main respiratory passages and by the appearance of hard spherical nodules on the surface of the lungs. The condition differs from that of silicosis produced by the inhalation of siliceous dust, for example, at Bendigo, Cobarr or Kalgoorlie, in that there is much less involvement of the portions of the lung directly concerned with the act of breathing. It has been found possible to differentiate by means of the X-ray photographs pneumoconiosis arising at Broken Hill from silicosis present in those who have worked in quartz mines as well as in Broken Hill. The persons affected with pneumoconiosis arising at Broken Hill show much less shortness of breath than usually accompanies the silicosis of miners.

Lead Deposit in the Lungs.

The Commission has been able to obtain *post mortem* a number of specimens from lungs of miners who had worked for years at Broken Hill. In the ash of these lungs the presence of lead, manganese and silica has been detected by chemical analysis. The Commission is satisfied that the association of these three substances together in these lungs definitely establishes the fact that dust from the mines at Broken Hill is present in the lungs. As a result of the medical examination of the mine workers the Commission recognizes that pneumoconiosis exists in three forms: a first stage of fibrosis, a second stage of fibrosis and a third condition of fibrosis supplemented by tuberculosis. A person in the first stage shows no impairment of his working capacity and general health. X-ray photographs show the presence of early fibrosis in the lungs, but no signs from which this condition of early fibrosis could be definitely recognized, have been detected during the clinical examination. A person in the second stage exhibits a more advanced fibrosis of the lungs in the X-ray photographs and, in the majority of individuals, more clinical evidence of the presence of the disease. In the third condition radiographic and clinical evidence of infection with tubercle is present. This tubercular infection may have supervened at any stage of pneumoconiosis. Its effect has been to injure seriously the health and working capacity of the mine worker. The condition of pneumoconiosis arises slowly. The Commission has not detected any signs of the presence of this stage of fibrosis of the lungs in persons who have worked less than eight years at practical mining. Pneumoconiosis arising in Broken Hill progresses so slowly that no obvious impairment of the working capacity occurs previous to infection with tuberculosis. The Commission finds that among those persons who have worked only in the mines at Broken Hill, 37 showed the first stage of pneumoconiosis, 7 showed the second stage and 24 showed the third condition of fibrosis supplemented by tuberculosis. In other words, 35% of those affected with pneumoconiosis have become infected with tuberculosis. Amongst those persons who have worked elsewhere in mines, 50 showed the first stage of pneumoconiosis, 36 showed the second stage and 35 showed the condition of fibrosis supplemented by tuberculosis. In other words, 29% of those affected with pneumoconiosis have become infected with tuberculosis.

Tuberculosis.

In addition, the Commission finds that 31 persons are suffering from tuberculosis with no signs of pneumoconiosis and that another 31 persons exhibit signs and symptoms suggestive of the presence of tuberculosis. The industrial histories of persons suffering from respiratory diseases arising in Broken Hill show that practically all those persons affected with fibrosis had worked as practical miners with drilling machines and in the process of blasting. The Commission is, therefore, led to conclude that it is the dust that accompanies those operations that passes into the lungs and occasions pneumoconiosis, on which tuberculosis may supervene later.

Incidence of Pulmonary Affections.

Among those persons who had worked under 10 years with drills only at Broken Hill, 1.5% showed the first stage

of pneumoconiosis, none the second stage and 0.4% fibrosis with tuberculosis. In all, 2% have become affected with pneumoconiosis. Among those persons who had worked 20 years and over 10 years with drills only at Broken Hill, 3% showed the first stage of pneumoconiosis, 1.3% the second stage and 3% showed fibrosis with tuberculosis. In all, 7.3% have become affected with pneumoconiosis. Among those persons who had worked 30 years and over 20 years with drills only at Broken Hill, 11% showed the first stage of pneumoconiosis, 0.7% the second stage and 6.4% showed fibrosis with tuberculosis. In all, 18% have become affected with pneumoconiosis. Among those persons who had worked more than 30 years with drills only at Broken Hill, 11% showed the first stage, 5% the second stage and 22% fibrosis with tuberculosis. In all, 39% have become affected with pneumoconiosis.

Among those persons who had worked under 10 years with drills at mines in Broken Hill and elsewhere, 2% showed the first stage, none the second stage and 1% fibrosis with tuberculosis. In all, 3% have become affected with pneumoconiosis. Among those persons who had worked 20 years and over 10 years with drills in mines at Broken Hill and elsewhere, 8% showed the first stage, 4% the second stage and 4.5% fibrosis with tuberculosis. In all, 16.5% have become affected with pneumoconiosis. Among those persons who had worked 30 years and over 20 years with drills in mines at Broken Hill and elsewhere, 5.5% showed the first stage, 12% the second stage and 10% fibrosis with tuberculosis. In all, 27.5% have become affected with pneumoconiosis. Among those persons who had worked more than 30 years with drills in mines at Broken Hill and elsewhere, 12% showed the first stage, 8% the second stage and 7% fibrosis with tuberculosis. In all, 27% have become affected with pneumoconiosis. These rates of morbidity take no account of pulmonary disease among miners which has led to a fatal termination. During the period from May, 1917, to June, 1920, not less than 215 miners died from pulmonary complaints excluding acute pneumonia.

Symptoms of Lead Poisoning.

During the course of its investigation the Commission has noticed that a number of mine workers shows signs of cardio-vascular disease, which may be the result of poisoning by lead. Samples of urine have been collected from 77 of these persons and chemical analyses of these urines indicate that approximately 50% of these persons are excreting lead. These persons are, therefore, suffering from a chronic form of lead poisoning. At the commencement of its work the Commission decided that it would not be satisfactory to conduct a complete investigation into the occurrence of lead poisoning in Broken Hill, on account of the fact that the majority of the mine workers would not have been exposed to lead dust for nearly a year before the investigation could be carried out. In asking the mine workers to submit themselves for medical examination, the Commission informed them that it considered that it would not be possible to determine how many persons were absorbing lead while the mines were at work by examination conducted twelve months after the exposure of mine workers to lead dust. In view of the number of persons showing symptoms suggestive of poisoning by lead and of the results obtained by the Commission from the chemical examination of the excretions of certain of these persons, the Commission is of opinion that its labours should be completed by a thorough chemical examination of the excretions of the mine workers carried out some months after the miners have resumed work. The presence of lead in the lungs of those mine workers whose respiratory organs have been subjected to chemical analysis, is a further reason for carrying out this investigation.

As a result of an examination of about 3,800 mine workers, the Commission is able to state that no ancylostomiasis is present at Broken Hill. The hookworm unit failed to discover a single hookworm during the whole course of its work in Broken Hill.

Recommendations.

In regard to the prevention of pulmonary disease arising from working in mines at Broken Hill, the Commission has reached the following conclusions:—

- (i.) No person suffering from tuberculosis should be per-

mitted to work in the mines, either on the surface or below ground.

(ii.) Recognizing that tuberculosis in mine workers will sooner or later lead to a fatal termination, the Commission is of opinion that compensation should be given to all persons found to have been affected with progressive tubercular disease of the lungs.

(iii.) The Commission is also of opinion that no person suffering from pneumoconiosis should be allowed to continue work along the line of lode, either on the surface or underground.

(iv.) While the Commission recognizes that the expectation of life in some of these individuals may be equal to that of normal healthy persons, these affected individuals are more liable to contract tuberculosis and, further, both tuberculosis, pneumonia and other pulmonary diseases will be more severe and fatal among them than among healthy individuals.

(v.) The Commission recommends that these individuals follow an occupation in the open air, either pastoral or agricultural. Should these persons adopt some occupation in which they are confined within doors or in which they are exposed to extra risks of tubercular and other infections, their health, working capacity and expectation of life will be less than that of persons not so affected. It suggests that some scheme for providing employment for these persons withdrawn from the mine should be prepared so that no obligation is thrown on the mine worker, removed from the mine, to find for himself a fresh avenue of employment.

(vi.) The Commission is also of opinion that these individuals affected with pneumoconiosis and withdrawn from work on the mines, should be kept under observation. Should these persons become affected with tuberculosis, they should receive compensation, since it will only be a question of time before a fatal termination is reached.

The Commission begs to point out that the majority of those who work in the mines at Broken Hill, have shown no signs of the accumulation of dust in their respiratory organs. By the use of radioscopic examinations it is possible to separate the healthy from the dusted individuals.

(vii.) The Commission recommends that in future all persons obtaining employment upon the mines should be subjected to a medical examination; and that this examination should consist of the taking of a radiographic photograph, a proceeding which will occupy only two or three minutes. Should any abnormality be detected upon the radiographic plate, the person should be subjected to a complete medical examination. If a resumption of work should take place at Broken Hill, the remaining 3,500 men who have not been before the Commission, should be subjected to immediate medical examination. Mine workers should also be examined from time to time, with the object of determining those who are being affected with dust. All persons found to be accumulating dust in their respiratory organs, should be withdrawn from the mines, should be provided with suitable occupation and should be kept under observation so that if they become infected with tuberculosis they may receive compensation.

The Commission hopes to report later on the individual differences found in mine workers in respect to the inhalation of dust.

(viii.) It recommends that a laboratory equipped for carrying out investigations upon pneumoconiosis and allied conditions among miners be endowed at Broken Hill. The Commission is of opinion that, provided those affected with tuberculosis and fibrosis be withdrawn from the mines and the system of medical inspection be instituted, the operation of mining can be carried on at Broken Hill with complete safety as far as any material injury to the lungs of the mine workers is concerned.

Owing to the fact that the Technical Commission has been unable to investigate the conditions of the mines at work, it feels that it cannot report on the degree of usefulness of jets, sprays and other means for reducing dust underground. It also feels that for the same reason it is not competent to report on the conditions of ventilation of these mines with a view to making recommendations to diminish the incidence of pneumoconiosis among machine workers underground. It can only draw attention to those methods

which have been found useful on other fields in reducing the amount of dust in the air.

(ix.) Taking into consideration the results of such observation and experiments as it could perform, the Commission is of opinion that a thorough investigation of the ventilation and dust conditions of the mines at Broken Hill should be undertaken when the mines resume work.

Naval and Military.

APPOINTMENTS.

The following announcements are made in the *Commonwealth of Australia Gazette*, Nos. 58 and 59, of July 1 and 8, 1920:—

Citizen Naval Forces of the Commonwealth (Royal Australian Naval Brigade).

To be Surgeon-Lieutenant—

Harold Powell, M.B., B.S., M.C., dated 1st May, 1920. Promotions, etc.—

Surgeon Lieutenant-Commander Henry John Wolverton Brennand is to be paid rates of pay and allowances prescribed for Surgeon Commander (on appointment) for the period he was acting in that rank, from 1st August, 1918, to 19th May, 1920, and he is promoted to the rank of Surgeon Commander, as from 20th May, 1920.

To be Surgeon Commanders—

Surgeon Lieutenant-Commander David Ernest Williams, dated 1st June, 1920.

Surgeon Lieutenant-Commander Hugh Armstrong, dated 1st June, 1920.

Australian Imperial Force.

Second Military District.

Major R. H. Hudson, M.C., Australian Army Medical Corps, having resigned, his appointment in the Australian Imperial Force, is terminated in England on 10th March, 1920, but to take effect from 9th May, 1920.

Captain K. M. Garrett, Australian Army Medical Corps, having resigned, his appointment in the Australian Imperial Force is terminated in England on 13th April, 1920, but to take effect from 27th April, 1920.

Third Military District.

Captain E. S. Joske, Australian Army Medical Corps, having resigned, his appointment in the Australian Imperial Force is terminated in England on 2nd March, 1920, but to take effect from 1st April, 1920.

Captain C. A. Verge, Australian Army Medical Corps, having resigned, his appointment in the Australian Imperial Force is terminated in England on 20th February, 1920, but to take effect from 3rd May, 1920.

Fourth Military District.

Major E. W. Morriss, Australian Army Medical Corps, to be Senior Medical Officer, Australian Imperial Force Headquarters, in succession to Lieutenant-Colonel L. W. Jeffries, D.S.O., O.B.E., A.D.M.S., to Australia. 6th March, 1920.

APPOINTMENTS TERMINATED.

First Military District.

Captain J. B. Hogg, 26th April, 1920.

Captain T. Leckie, 26th April, 1920.

Second Military District.

Lieutenant-Colonel F. Marshall, C.M.G., 23rd May, 1920.

Lieutenant-Colonel H. C. Taylor-Young, O.B.E., 18th July, 1920.

Captain H. G. Leahy, M.C., 4th April, 1920.

Captain R. M. Alcorn, 1st May, 1920.

Captain D. de la F. Henry, 19th February, 1920.

Captain H. Dolman, 14th June, 1920.

¹ Captain F. G. Robertson, 18th April, 1918.

¹ There are two officers holding the rank of Captain of the name of F. G. Robertson; Captain Frederick Gordon Robertson obtained his commission in the Army Medical Corps, while Captain Frank George Robertson served in the Army Veterinary Hospital. There is no indication as to which officer the entry has reference.

Third Military District.

Major N. H. Fairley, O.B.E., 19th May, 1920.
 Captain E. M. Gordon-Glassford, M.C., 11th May, 1920.
 Captain H. Mendelsohn, M.C., 16th April, 1920.
 Captain J. R. Donaldson, 14th April, 1920.
 Captain J. McDonald, 1st April, 1920.

Fourth Military District.

Captain N. B. Hall, 18th June, 1920.
 Captain A. R. Bean, 19th June, 1920.

Australian Naval and Military Expeditionary Force.

The following appointments are notified in the *Commonwealth of Australia Gazette*, No. 59, of July 8, 1920:—

To be Captain and Honorary Major—Army Medical Corps—

Captain (Honorary Major) E. A. Sanbrook, Australian Army Medical Corps, 20th May, 1920.

To be Captain—Army Medical Corps—

George Munroe Mackay, 20th May, 1920.

Australian Military Forces.

APPOINTMENTS, PROMOTIONS, ETC..

First Military District.**Australian Army Medical Corps—**

Captain A. A. McKay to be transferred to the Australian Army Medical Corps, Third Military District, with Corps seniority as from date of transfer, 1st June, 1920.

Australian Army Medical Corps Reserve—

Joseph Ballantine Hogg and Thomson Leckie to be Honorary Captains, 27th April, 1920.

Honorary Captains J. B. Hogg and T. Leckie to be granted the temporary rank and pay of Major whilst employed at No. 17 Australian General Hospital, 27th April, 1920.

Reserve of Officers—

Captain N. G. Sutton to be transferred from the Reserve of Officers, Second Military District, 1st March, 1920.

Second Military District.**Australian Army Medical Corps—**

Nigel Philip Boulton to be Captain, provisionally, 29th April, 1920.

Honorary Captain H. Sutton to be transferred from the Australian Army Medical Corps Reserve, 3rd Military District, and to be Captain, provisionally, 1st May, 1920.

Reserve of Officers—

Captain N. G. Sutton to be transferred to the Reserve of Officers, First Military District, 1st March, 1920.

Australian Army Medical Corps Reserve—

Roger Alken Rankine, O.B.E., and Thomas Eric Parkey to be Honorary Captains, 22nd April, 1920.

The resignation of Honorary Captain A. Dunn of his commission is accepted, 30th April, 1920.

Third Military District.**Australian Army Medical Corps Reserve—**

Honorary Captain H. Sutton to be transferred to the Australian Army Medical Corps, Second Military District, and to be Captain, provisionally, 1st May, 1920.

Fourth Military District.**Australian Army Medical Corps—**

Captain R. L. Kenihan, M.C., to be transferred from the Reserve of Officers, 1st March, 1920, and to be granted the temporary rank and pay of Major whilst employed at No. 7 Australian General Hospital, 2nd March, 1920.

Sixth Military District.**Australian Army Medical Corps—**

Honorary Captain F. B. Martin to be granted the temporary rank and pay of Major whilst employed at No. 9 Australian General Hospital, 1st April, 1920.

The resignation of Honorary Captain R. E. Harris of his commission is accepted, 1st May, 1920.

Awards of the Colonial Auxiliary Forces Officers' Decoration.

Lieutenant-Colonel A. E. Shepherd, C.B.E., D.S.O.
 Major J. Kerr.
 Captain S. C. Jamieson.

THE OSLER MEMORIAL FUND.

We beg to acknowledge the receipt of the following contribution to the Osler Memorial Fund:—

	f	s.	d.
Dr. A. V. M. Anderson	5	5	0
Total, £26 5s..			

University Intelligence.**THE UNIVERSITY OF SYDNEY.**

A meeting of the Senate of the University of Sydney was held on July 5, 1920, at University Chambers, Phillip Street, Sydney.

A memorandum was received from the University dental students in regard to the condition of the United Dental Hospital. It was resolved that the Government be urged to expedite the restoration and re-equipment of the Hospital.

An application from the Royal Military College, asking the University to undertake the entrance examination of the college, was referred to the Professorial Board to carry out the details of the examination.

Letters were received from the Minister of Defence expressing appreciation (1) of the expert assistance and advice rendered by Professor Warren in connexion with munition work, and (2) of the services rendered by Colonel Sir Henry Barraclough, K.B.E., as an adviser on munition matters, and as Officer-in-Charge of Australian munition and war works abroad.

On the recommendation of Professor Mackie, it was resolved (1) that Dr. Phillips be appointed lecturer in measurement of intelligence and experimental methods in education research (20 lectures), and (2) the course of lectures on the history of education delivered by Dr. Cole to be increased from 30 to 45 lectures.

As Professor Wilson was required to take up duties at Cambridge University in October next, leave of absence was granted to him for Michaelmas Term; and, pending the completion of arrangements for his successor, it was resolved that Dr. (Colonel) F. A. Maguire, D.S.O., be appointed Acting-Professor and Dr. John Hunter be appointed to deliver the lectures in introductory anatomy.

It was resolved that Assistant Professor Holme be appointed to the Chair of English Language.

The following degrees were conferred *in absentia*:—

Ch.M.: Armstrong, H. M., Turner, C. R..

Correspondence.**MEDICAL APPRENTICESHIP IN THE OLD DAYS.**

Sir: I am enclosing herewith a copy of the indenture of a medical apprentice, which I thought might be of interest to you for publication, as the system of apprenticeship died out shortly after this date, 1855.

My father was 14 years of age when he was apprenticed and after that term went to university. He told me he did more midwifery before he was 20 than ever I would do in my life!

Yours, etc.,

STRATFORD SHELDON.

149 Macquarie Street, Sydney,
 June 22, 1920.

[COPY.]

This Indenture Witnesseth that William Sheldon the younger son of William Sheldon of Stratford upon Avon in the county of Warwick, Auctioneer by and with the consent of his said Father testified by is executing these

Presents doth put himself Apprentice to Frederick Pritchard of Stratford upon Avon Surgeon and Apothecary to learn his Art with him after the manner of an Apprentice to serve from the day of the date hereof unto the full End and term of Five years from thence next following to be fully complete and ended during which term the said Apprentice his Master faithfully shall serve his secrets keep, his lawful command everywhere gladly do, he shall do no damage to his said Master nor see to be done of others but to his Power shall tell or forwith give warning to his said Master of the same he shall not waste the Goods of his said Master nor lend them unlawfully to any he shall not commit fornication nor contract Matrimony within the said term, he shall not play at Cards or Dice Tables or any other unlawful games whereby his said Master may have any loss with his own goods or others during the said Term without Liscence of his said Master he shall neither buy nor sell shall not haunt Taverns or Playhouses nor absent himself from his Master's service day or night unlawfully but in all things as a faithful apprentice he shall behave himself towards his said Master during the said term and the said Frederick Pritchard in consideration of the sum of Fifty pounds sterling to him paid by the said William Sheldon at the execution these presents his said apprentice in the art of a Surgeon and apothecary which he useth by the best means that he can shall teach and instruct or cause to be taught and instructed. And the said William Sheldon doth hereby covenant with the said Frederick Pritchard that the said William Sheldon his executors and Administrators shall and will find and provide for his son the said William Sheldon the younger sufficient meat drink lodging and all other necessities during the said term and for the true performance of all and every the said Covenants and agreements either of the said Parties bindeth himself unto the other by these Presents In Witness whereof the Parties above named to these Indentures interchangeably have put their hands and seals the Twenty-ninth day of September and in the nineteenth year of the reign of our Sovereign Lady Victoria by the Grace of God of the United Kingdom and Great Britain and Ireland Queen Defender of the Faith and in the year of our Lord one thousand and eight hundred and fifty-five.

(Signed) WILLIAM SHELDON Junr.
W. SHELDON
FREDERICK PRITCHARD

Stamp: Three pounds.

N.B.—The Indenture Covenant article or Contract must bear the day it is executed and what money or other thing is given or contracted for the Clerk or Apprentice must be inserted in words at length otherwise the Indenture will be void the Master forfeit Fifty pounds and another Penalty and the Apprentice be disabled to follow trade or be made Free.

Signed sealed and delivered by all Parties in the presence of SAM BRADSHAW.

ETHYL CHLORIDE AS AN ANÆSTHETIC.

Sir: I notice in your issue of June 19 a letter signed "Stertor," drawing attention to the fact of a dentist administering ethyl chloride and also raising the question of the advisability of the use of that drug for general anæsthesia by the dental profession.

"Stertor" must be cognizant of the fact that nitrous oxide and its sequence with ethyl chloride and the latter by itself have for a great number of years been administered by dentists for short operations, especially extractions. Ether and chloroform have been rigidly left alone; dentists, being aware of the greater toxicity of the last-mentioned drugs, prefer not to encroach on the medical side, knowing full well that, for prolonged operations, the want of experience in the detection of heart lesions severely handicaps them. Nitrous oxide and ethyl chloride, being so much less toxic, do not require that experience, yet when the slightest doubt exists, a medical opinion is always sought.

For the information of "Stertor" I might mention that at all reputable universities very little difference is made between the dental and medical students as regards the course of instruction in anatomy, physiology and all the larger subjects, inclusive of the use, administration and dangers of anæsthetics. The dental student, similar to the medical student, takes his practical work the final year of his course, learning not only to operate under anæsthetics, but to administer them with the exception of ether and chloroform.

Observation over more than twenty years has convinced me that in the administration of ethyl chloride, the ordinary medical man is weak and I do not wonder that "Stertor" has seen a number of cases where the drug was administered which proved nearly fatal.

I have on many occasions seen the pungent vapour squirted on so rapidly, no notice being taken of an induction period, that the anæsthesia was only comparable to a hit on the jaw with a hammer. Chloroform similarly given would have been fatal, yet with the latter drug, the medical man's training would have told him that a slow induction makes for safety.

It would be an excellent thing if in nitrous oxide and ethyl chloride a medical student could get his training in a dental school, where both drugs are specialized in and the proper technique taught.

"Stertor" asks are the dentists prepared to take all the risks involved. An answer to that is that the properly trained dentist of the present day is always ready and equipped for emergencies.

The number of fatalities in all parts of the world is infinitesimal, proving that the greatest care has been exercised in the administration.

Admitting the difference in the toxicity of ether and chloroform to nitrous oxide and ethyl chloride, can medical men show a better result?

The dentists, in regard to general anæsthesia, do not want to be recognized as the equal of the medical profession, but they desire to remain in their own field, which includes ethyl chloride, leaving the whole of the field of anæsthetics open to the medical fraternity to work upon and use as the opportunity suggests.

Yours, etc.,

P. CHATER CHARLTON,
D.M.D., Harvard Univ. M.D.S.; R.C.S., Eng.
Pymble, New South Wales,
July 3, 1920.

PAYING HOSPITALS.

Sir: *Re* correspondence paying hospitals in your last issue, your correspondent advocates the charging of patients in Government hospitals by medical men who are on hospital staffs.

This simply means that a certain number of medical men who hold staff positions in Government hospitals, appointed by merit, sometimes by influence, would have a monopoly of cheap hospital accommodation for their private patients. Very nice for the fortunate few, but nothing to commend it to the profession at large.

Yours, etc.,

COUNTRY MED.

South Australia.

We learn that the Selection Committee at the University of Melbourne has nominated Mr. Charles Eric Glasgon Beveridge for the 1920 Rhodes Scholarship for Victoria. Mr. Beveridge is a third year student of medicine and has completed his science course.

Books Received.

ANATOMY: DESCRIPTIVE AND APPLIED, by Henry Gray, F.R.S., F.R.C.S. Twenty-first Edition, Edited by Robert Howden, M.B., D.Sc.; Notes on Applied Anatomy revised by A. J. Jex-Blake, M.D., F.R.C.P., and John Clay, M.B., F.R.C.S.; 1920. London: Longmans, Green & Co.; pp. 1,366, with 1,215 illustrations, of which 565 are coloured. Price, 42s. net.

- MANUAL OF HYGIENE FOR STUDENTS**, by John Glalster, M.D., D.P.H. Third Edition; 1920. Edinburgh: E. & S. Livingstone; Crown 8vo., pp. 438. Price, 10s. net.
- THE MEDICAL ANNUAL, 1920: A YEAR BOOK OF TREATMENT AND PRACTITIONER'S INDEX**, Thirty-eighth year; 1920. Bristol: John Wright & Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.; Demy 8vo., pp. 498. Price, 15s. net.
- HANDBOOK OF DISEASES OF THE NOSE, THROAT AND EAR: FOR STUDENTS AND PRACTITIONERS**, by W. S. Syme, M.D., F.R.F.P. and S.G., F.R.S.E.; 1920. Edinburgh, E. & S. Livingstone; Crown 8vo., pp. 329, with 26 illustrations. Price, 9s. net.
- A MANUAL OF NEURASTHENIA (NERVOUS EXHAUSTION)**, by Ivo Gekkie Cobb, M.D., M.R.C.S.; 1920. London: Baillière, Tindall & Cox; Demy 8vo., pp. 366. Price, 12s. 6d. net.
- TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND**, Vols. XXXVI. and XXXVII., Edited by J. Alfred Scott, M.A., M.D., F.R.C.S.I.; 1920. Dublin: John Falconer. London: Baillière, Tindall & Cox. Edinburgh: James Thin. Bristol: John Wright & Co.; Demy 8vo., pp. 635, with illustrations.
- WAR AGAINST TROPICAL DISEASE**, Being Seven Sanitary Sermons Addressed to all Interested in Tropical Hygiene and Administration, by Andrew Balfour, M.D., B.Sc., F.R.C.P., D.P.H., Director-in-Chief of the Wellcome Bureau of Scientific Research; Published for Wellcome Bureau of Scientific Research by Baillière, Tindall & Cox; 1920. London: Crown 4to; pp. 220, with 182 illustrations. Price, 12s. 6d. net.
- MENTAL DEFICIENCY (AMENTIA)**, by A. F. Tregold, M.D., F.R.S.; 1920. London: Baillière, Tindall & Cox; Third Edition, revised and enlarged; Demy 8vo., pp. 525, illustrated. Price, 25s. net.

Medical Appointments.

The appointment as Medical Officers of Health of Dr. N. A. Albiston (B.M.A.) for the Shire of Belfast, of Dr. W. H. Rennick (B.M.A.) for the North Riding and of Dr. G. Unwin Taylor (B.M.A.) for the Central Riding of the Shire of Korong, Victoria, is announced in the *Victoria Government Gazette*.

Dr. E. W. Ferguson (B.M.A.) has been appointed Principal Microbiologist, this position having been vacant since the resignation of Professor Cleland (B.M.A.); and Dr. E. L. Morgan (B.M.A.) has succeeded Dr. Ferguson as Assistant Microbiologist to the Department of Public Health of New South Wales.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxiii.

Manchester Royal Infirmary: Four Resident Medical Officers. Home Secretary's Office, Brisbane: Resident Medical Officer, Brisbane Hospital.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges (other than the Grand United Order of Oddfellows and the Melbourne Tramways Mutual Benefit Society), Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital. Stannary Hills Hospital.

Branch.	APPOINTMENTS.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice - Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmalm United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

- July 27.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
 July 28.—Vic. Branch, B.M.A., Council.
 July 29.—S. Aust. Branch, B.M.A..
 July 30.—N.S.W. Branch, B.M.A..
 Aug. 4.—Vic. Branch, B.M.A..
 Aug. 9.—N.S.W. Branch, B.M.A., Ethics Committee.
 Aug. 10.—Tas. Branch, B.M.A..
 Aug. 12.—Vic. Branch, B.M.A., Council.
 Aug. 13.—N.S.W. Branch, B.M.A., Clinical.
 Aug. 13.—S. Aust. Branch, B.M.A., Council.
 Aug. 17.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
 Aug. 17.—Illawarra Suburbs Med. Assoc. (N.S.W.).
 Aug. 18.—North-Eastern Med. Assoc. (N.S.W.).
 Aug. 18.—W. Aust. Branch, B.M.A..
 Aug. 19.—Western Suburbs Med. Assoc. (N.S.W.).

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated. All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: City 2645.)

We are seeking copies of our issues of February 14 and 28, 1920. There has been an unusual demand on our stock, which is now depleted. Members who do not keep *The Medical Journal of Australia* for binding, are requested to send us their copies, on receipt of which the usual payment of the face value will be made.